Easy

Directions: Read the passage and answer the following question.

British colonial policy ... went through two policy phases, or at least there were two strategies between which its polices actually oscillated, sometimes to its great advantage. At first, the new colonial apparatus exercised caution, and occupied India by a mix of military power and subtle diplomacy, the high ground in the middle of the circle of circles. This, however, pushed them into contradictions. For, whatever their sense of the strangeness of the country and the thinness of colonial presence, the British colonial state represented the great conquering discourse of Enlightenment rationalism, entering India precisely at the moment of its greatest unchecked arrogance. As inheritors and representatives of this discourse, which carried everything before it, this colonial state could hardly adopt for long such a self-denying attitude. It had restructured everything in Europe – the productive system, the political regimes, the moral and cognitive orders – and would do the same in India, particularly as some empirically inclined theorists of that generation considered the colonies a massive laboratory of utilitarian or other theoretical experiments. Consequently, the colonial state could not settle simply for eminence at the cost of its marginality; it began to take initiatives to introduce the logic of modernity into Indian society. But this modernity did not enter a passive society. Sometimes, its initiatives were resisted by pre-existing structural forms. At times, there was a more direct form of collective resistance. Therefore the map of continuity and discontinuity that this state left behind at the time of independence was rather complex and has to be traced with care.

Most significantly, of course, initiatives for ... modernity came to assume an external character. The acceptance of modernity came to be connected, ineradicably, with subjection. This again points to two different problems, one theoretical, the other political. Theoretically, because modernity was externally introduced, it is explanatorily unhelpful to apply the logical format of the 'transition process' to this pattern of change. Such a logical format would be wrong on two counts. First, however subtly, it would imply that what was proposed to be bulk was something like European capitalism. (And, in any case. historians have forcefully argued that what it was to replace was not like feudalism, with or without modificatory adjectives.) But, more fundamentally, the logical structure of endogenous change does not apply here. Here transformation agendas attack as an external force. This externality is not something that can be casually mentioned and forgotten. It is inscribed on every move, every object, every proposal, every legislative act, each line of causality. It comes to be marked on the epoch itself. This repetitive emphasis on externality should not be seen as a nationalist initiative that is so well rehearsed in Indian social science...

Quite apart from the externality of the entire historical proposal of modernity, some of its contents were remarkable ... Economic reforms, or rather alterations ... did not foreshadow the construction of a classical capitalist economy, with its necessary emphasis on extractive and transport sectors. What happened was the creation of a degenerate version of capitalism – what early dependency theorists called the 'development of underdevelopment'.

Question: Which of the following observations is a valid conclusion to draw from the author's statement that "the logical structure of endogenous change does not apply here. Here transformation agendas attack as an external force"?

option 1. Colonised societies cannot be changed through logic: they need to be transformed with external force.

option2. The endogenous logic of colonialism can only bring change if it attacks and transforms external forces.

option3. Indian society is not endogamous; it is more accurately characterised as aggressively exogamous.

option 4. The transformation of Indian society did not happen organically, but was forced by colonial agendas.

Correct Answer: 4

Explanation: The answer can be supported by, "Theoretically, because modernity was externally introduced, it is explanatorily unhelpful to apply the logical format of the 'transition process' to this pattern of change." Modernity did not occur naturally but was externally introduced. Option 4 is the answer.

The passage does not state that all colonised societies cannot be changed by logic.

Endogenous means having internal cause or origin, while endogamous means marriage within a specific tribe. Option 3 is ruled out.

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Question: "Consequently, the colonial state could not settle simply for eminence at the cost of its marginality; it began to take initiatives to introduce the logic of modernity into Indian society." Which of the following best captures the sense of this statement?

option 1. The colonial enterprise was a costly one; so to justify the cost it began to take initiatives to introduce the logic of modernity into Indian society.

option 2. The cost of the colonial state's eminence was not settled; therefore, it took the initiative of introducing modernity into Indian society.

option3. The colonial state felt marginalised from Indian society because of its own modernity; therefore, it sought to address that marginalisation by bringing its modernity to change Indian society.

option 4. The colonial state's eminence was unsettled by its marginal position; therefore, it developed Indian society by modernising it.

Correct Answer: 3

Explanation: The colonial state felt they were marginalised. To bring the Indian state to the same footing, they sought to introduce modernity, which they felt was the next logical step into Indian society. Option 3 is the answer.

The colonial enterprise tried to introduce the logic of modernity because it felt marginalised, rather than to justify the cost of colonisation.

Option 4 (...it developed Indian society) is opposite to what is mentioned in the last paragraph of the passage, "What happened was the creation of a degenerate version of capitalism – what early dependency theorists called the 'development of underdevelopment'."

Directions: Read the passage and answer the following question.

British colonial policy ... went through two policy phases, or at least there were two strategies between which its polices actually oscillated, sometimes to its great advantage. At first, the new colonial apparatus exercised caution, and occupied India by a mix of military power and subtle diplomacy, the high ground in the middle of the circle of circles. This, however, pushed them into contradictions. For, whatever their sense of the strangeness of the country and the thinness of colonial presence, the British colonial state represented the great conquering discourse of Enlightenment rationalism, entering India precisely at the moment of its greatest unchecked arrogance. As inheritors and representatives of this discourse, which carried everything before it, this colonial state could hardly adopt for long such a self-denying attitude. It had restructured everything in Europe – the productive system, the political regimes, the moral and cognitive orders – and would do the same in India, particularly as some empirically inclined theorists of that generation considered the colonies a massive laboratory of utilitarian or other theoretical experiments. Consequently, the colonial state could not settle simply for eminence at the cost of its marginality; it began to take initiatives to introduce the logic of modernity into Indian society. But this modernity did not enter a passive society. Sometimes, its initiatives were resisted by pre-existing structural forms. At times, there was a more direct form of collective resistance. Therefore the map of continuity and discontinuity that this state left behind at the time of independence was rather complex and has to be traced with care.

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Question: All of the following statements, if true, could be seen as supporting the arguments in the passage, EXCEPT:

option1. modernity was imposed upon India by the British and, therefore, led to underdevelopment.

option2. the introduction of capitalism in India was not through the transformation of feudalism, as happened in Europe.

option 3. the change in British colonial policy was induced by resistance to modernity in Indian society.

option 4. throughout the history of colonial conquest, natives have often been experimented on by the colonisers.

Correct Answer: 3

Explanation: Option 1 can be inferred from, "What happened was the creation of a degenerate version of capitalism – what early dependency theorists called the 'development of underdevelopment'."

Option 2 can be inferred from the second paragraph. Indian transition happened inorganically through external factors.

Option 4 can be inferred from, "...empirically inclined theorists of that generation considered the colonies a massive laboratory of utilitarian or other theoretical experiments."

The change in British colonial policy was not induced by resistance to modernity in Indian society, but due to the perception that the British were marginalised in the context of the Indian society. Option 3 is the correct answer.

Directions: Read the passage and answer the following question.

British colonial policy ... went through two policy phases, or at least there were two strategies between which its polices actually oscillated, sometimes to its great advantage. At first, the new colonial apparatus exercised caution, and occupied India by a mix of military power and subtle diplomacy, the high ground in the middle of the circle of circles. This, however, pushed them into contradictions. For, whatever their sense of the strangeness of the country and the thinness of colonial presence, the British colonial state represented the great conquering discourse of Enlightenment rationalism, entering India precisely at the moment of its greatest unchecked arrogance. As inheritors and representatives of this discourse, which carried everything before it, this colonial state could hardly adopt for long such a self-denying attitude. It had restructured everything in Europe – the productive system, the political regimes, the moral and cognitive orders – and would do the same in India, particularly as some empirically inclined theorists of that generation considered the colonies a massive laboratory of utilitarian or other theoretical experiments. Consequently, the colonial state could not settle simply for eminence at the cost of its marginality; it began to take initiatives to introduce the logic of modernity into Indian society. But this modernity did not enter a passive society. Sometimes, its initiatives were resisted by pre-existing structural forms. At times, there was a more direct form of collective resistance. Therefore the map of continuity and discontinuity that this state left behind at the time of independence was rather complex and has to be traced with care.

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Question: All of the following statements about British colonialism can be inferred from the first paragraph, EXCEPT that it:

option 1. faced resistance from existing structural forms of Indian modernity.

option2. allowed the treatment of colonies as experimental sites.

option 3. was at least partly an outcome of Enlightenment rationalism.

option4. was at least partly shaped by the project of European modernity.

Correct Answer: 1

Explanation: Option 2 can be inferred from, "...empirically inclined theorists of that generation considered the colonies a massive laboratory of utilitarian or other theoretical experiments."

Option 3 can be inferred from, "British colonial state represented the great conquering discourse of Enlightenment rationalism ... could hardly adopt for long such a self-denying attitude."

Option 4 gets support from, "It had restructured everything in Europe – the productive system, the political regimes, the moral and cognitive orders – and would do the same in India..."

Option 1 does not get support from the passage. It is mentioned, "Sometimes, its initiatives were resisted by pre-existing structural forms." But the words "Indian modernity" in the option do not find support.

Directions: Read the passage and answer the following question.

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Question: Which one of the following 5-word sequences best captures the flow of the arguments in the passage?

option 1. Colonial policy - arrogant rationality - resistance - independence - development

option 2. Military power - colonialism - restructuring - feudalism - capitalism

option 3. Colonial policy - Enlightenment - external modernity - subjection - underdevelopment

option 4. Military power - arrogance - laboratory - modernity - capitalism

Correct Answer: 3

Explanation: The first part of the passage talks about British colonial policy but options 2 and 4 begin with "military power", hence ruled out. The second idea mentioned in the passage is about Enlightenment rationalism - "British colonial state represented the great conquering discourse of Enlightenment rationalism, entering India precisely at the moment of its greatest unchecked arrogance." Then it mentions about how modernity was inorganically injected into India by subjecting it to external forces. The passage ends with mentioning 'development of underdevelopment'. So, option 3 is the answer.

Directions: Read the passage and answer the following question.

War, natural disasters and climate change are destroying some of the world's most precious cultural sites. Google is trying to help preserve these archaeological wonders by allowing users access to 3D images of these treasures through its site. But the project is raising questions about Google's motivations and about who should own the digital copyrights. Some critics call it a form of ''digital colonialism.''

When it comes to archaeological treasures, the losses have been mounting. ISIS blew up parts of the ancient city of Palmyra in Syria and an earthquake hit Bagan, an ancient city in Myanmar, damaging dozens of temples, in 2016. In the past, all archaeologists and historians had for restoration and research were photos, drawings, remnants and intuition.

But that's changing. Before the earthquake at Bagan, many of the temples on the site were scanned ... [These] scans ... are on Google's Arts and Culture site. The digital renditions allow viewers to virtually wander the halls of the temple, look up-close at paintings and turn the building over, to look up at its chambers ... [Google Arts and Culture] works with museums and other nonprofits ... to put high-quality images online.

The images of the temples in Bagan are part of a collaboration with CyArk, a nonprofit that creates the 3D scanning of historic sites ... Google ... says [it] doesn't make money off this website. but it fits in with Google's mission to make the world's information available and useful.

Critics say the collaboration could be an attempt by a large corporation to wrap itself in the sheen of culture. Ethan Watrall, an archaeologist, professor at Michigan State University and a member of the Society for American Archaeology, says he's not comfortable with the arrangement between CyArk and Google ... Watrall says this project is just a way for Google to promote Google. ''They want to make this material accessible so people will browse it and be filled with wonder by it,'' he says. ''But at its core, it's all about advertisements and driving traffic.'' Watrall says these images belong on the site of a museum or educational institution, where there is serious scholarship and a very different mission ... [There's] another issue for some archaeologists and art historians. CyArk owns the copyrights of the scans – not the countries where these sites are located. That means the countries need CyArk's permission to use these images for commercial purposes. Erin Thompson. a professor of art crime at John Jay College of Criminal Justice in New York City, says it's the latest example of a Western nation appropriating a foreign culture, a centuries-long battle ... CyArk says it copyrights the scans so no one can use them in an inappropriate way. The company says it works closely with authorities during the process, even training local people to help. But critics like Thompson are not persuaded ... She would prefer the scans to be owned by the countries and people where these sites are located.

Question: Of the following arguments, which one is LEAST likely to be used by the companies that digitally scan cultural sites?

option 1. It helps preserve precious images in case the sites are damaged or destroyed.

option 2. It provides images free of cost to all users.

option 3. It enables people who cannot physically visit these sites to experience them.

option 4. It allows a large corporation to project itself as a protector of culture.

Correct Answer: 4

Explanation: Option 4 is not the valid argument because it implies authoritarian attitude of the company. This is a self centered goal of such a company that digitally scans cultural sites. Such company can be a promoter of culture but not a protector of culture. Options 1, 2 and 3 would help the cause of companies that scan cultural sites.

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Question: Based on his views mentioned in the passage, one could best characterise Dr. Watrall as being

option 1. critical about the links between a non-profit and a commercial tech platform for distributing archaeological images.

option 2. uneasy about the marketing of archaeological images for commercial use by firms such as Google and CyArk.

option3. dismissive of laypeople's access to specialist images of archaeological and cultural sites.

option 4. opposed to the use of digital technology in archaeological and cultural sees in developing countries.

Correct Answer: 1

Explanation: As per the passage, Watrall is not comfortable with the arrangement between Cyark and Google. Option 1 is the best choice.

Words "marketing of archaeological images for commercial use" make option 2 weak; "Google ... says [it] doesn't make money off this website." It is not mentioned that Google uses the images for commercial purposes.

Option 3 is incorrect; Watrall is not dismissive of laypeople's access to those images (no reference from the passage).

Option 4 is incorrect; the professor is against Google's intention, not against the technology.

Directions: Read the passage and answer the following question.

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Question: By "digital colonialism", critics of the CyArk-Google project are referring to the fact that

option 1. the scanning process can damage delicate frescos and statues at the sites.

option 2. CyArk and Google have been scanning images without copyright permission from the host countries.

option3. CyArk and Google have not shared the details of digitisation with the host countries.

option 4. countries where the scanned sites are located do not own the scan copyrights.

Correct Answer: 4

Explanation: The term 'digital colonialism' is mentioned in the first paragraph, which conveys that critics have raised questions about who should own the copyrights. Refer to the part, "[There's] another issue for some archaeologists and art historians. CyArk owns the copyrights of the scans – not the countries where these sites are located. That means the countries need CyArk's permission to use these images for commercial purposes." So, option 4 is the answer. Other options do not find reference from the passage.

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Question: In Dr. Thompson's view, CyArk owning the copyright of its digital scans of archaeological sites is akin to

option 1. the seizing of ancient Egyptian artefacts by a Western museum.

option2. the illegal downloading of content from the internet.

option 3. digital platforms capturing users' data for market research.

option4. tourists uploading photos of monuments onto social media.

Correct Answer: 1

Explanation: Refer to the part, "Erin Thompson. a professor of art crime at John Jay College of Criminal Justice in New York City, says it's the latest example of a Western nation appropriating a foreign culture, a centuries-long battle." The only option that is an example of a Western nation appropriating a foreign culture would be the seizing of ancient Egyptian artefacts by a Western museum. The site belongs to some other country, but the copyrights are owned by some other entity. Option 1 is the right analogy.

Directions: Read the passage and answer the following question.

War, natural disasters and climate change are destroying some of the world's most precious cultural sites. Google is trying to help preserve these archaeological wonders by allowing users access to 3D images of these treasures through its site. But the project is raising questions about Google's motivations and about who should own the digital copyrights. Some critics call it a form of ''digital colonialism.''

When it comes to archaeological treasures, the losses have been mounting. ISIS blew up parts of the ancient city of Palmyra in Syria and an earthquake hit Bagan, an ancient city in Myanmar, damaging dozens of temples, in 2016. In the past, all archaeologists and historians had for restoration and research were photos, drawings, remnants and intuition.

But that's changing. Before the earthquake at Bagan, many of the temples on the site were scanned ... [These] scans ... are on Google's Arts and Culture site. The digital renditions allow viewers to virtually wander the halls of the temple, look up-close at paintings and turn the building over, to look up at its chambers ... [Google Arts and Culture] works with museums and other nonprofits ... to put high-quality images online.

The images of the temples in Bagan are part of a collaboration with CyArk, a nonprofit that creates the 3D scanning of historic sites ... Google ... says [it] doesn't make money off this website. but it fits in with Google's mission to make the world's information available and useful.

Critics say the collaboration could be an attempt by a large corporation to wrap itself in the sheen of culture. Ethan Watrall, an archaeologist, professor at Michigan State University and a member of the Society for American Archaeology, says he's not comfortable with the arrangement between CyArk and Google ... Watrall says this project is just a way for Google to promote Google. ''They want to make this material accessible so people will browse it and be filled with wonder by it,'' he says. ''But at its core, it's all about advertisements and driving traffic.'' Watrall says these images belong on the site of a museum or educational institution, where there is serious scholarship and a very different mission ... [There's] another issue for some archaeologists and art historians. CyArk owns the copyrights of the scans – not the countries where these sites are located. That means the countries need CyArk's permission to use these images for commercial purposes. Erin Thompson. a professor of art crime at John Jay College of Criminal Justice in New York City, says it's the latest example of a Western nation appropriating a foreign culture, a centuries-long battle ... CyArk says it copyrights the scans so no one can use them in an inappropriate way. The company says it works closely with authorities during the process, even training local people to help. But critics like Thompson are not persuaded ... She would prefer the scans to be owned by the countries and people where these sites are located.

Question: Which of the following, if true, would most strongly invalidate Dr. Watrall's objections?

option 1. Google takes down advertisements on its website hosting CyArk's scanned images.

option 2. CyArk uploads its scanned images at archaeological sites onto museum websites only.

option3. There is a ban on CyArk scanning archeological sites located in other countries.

option4. CyArk does not own the copyright on scanned images of archaeological sites.

Correct Answer: 2

Explanation: It is mentioned in the passage, "Watrall says these images belong on the site of a museum or educational institution, where there is serious scholarship and a very different mission." So, it can be said that Watrall would not object if the digitally scanned images are on official museum websites and archaeological sites. Option 2, if true, will invalidate Dr. Watrall's objections.

Options 3 and 4 would not prevent promotion of and commercialisation by Google (Watrall considers the venture as a medium to promote Google itself).

Google's taking down of advertisements only would not invalidate Dr. Watrall's objections, option 1 is also weak.

Directions: Read the passage and answer the following question.

The magic of squatter cities is that they are improved steadily and gradually by their residents. To a planner's eye, these cities look chaotic. I trained as a biologist and to my eye, they look organic. Squatter cities are also unexpectedly green. They have maximum density – 1 million people per square mile in some areas of Mumbai – and have minimum energy and material use. People get around by foot, bicycle, rickshaw, or the universal shared taxi.

Not everything is efficient in the slums, though. In the Brazilian favelas where electricity is stolen and therefore free, people leave their lights on all day. But in most slums recycling is literally a way of life. The Dharavi slum in Mumbai has 400 recycling units and 30,000 ragpickers. Six thousand tons of rubbish are sorted every day. In 2007, the Economist reported that in Vietnam and Mozambique. ''Waves of gleaners sift the sweepings of Hanoi's streets, just as Mozambiquan children pick over the rubbish of Maputo's main tip. Every city in Asia and Latin America has an industry based on gathering up old cardboard boxes.''...

In his 1985 article, Calthorpe made a statement that still jars with most people: ''The city is the most environmentally benign form of human settlement. Each city dweller consumes less land, less energy, less water, and produces less pollution than his counterpart in settlements of lower densities.'' ''Green Manhattan'' was the inflammatory tide of a 2004 New Yorker article by David Owen. ''By the most significant measures,'' he wrote, ''New York is the greenest community in the United States, and one of the greenest cities in the world ... The key to New York's relative environmental benignity is its extreme compactness ... Placing one and a half million people on a twenty-three-square-mile island sharply reduces their opportunities to be wasteful.'' He went on to note that this very compactness forces people to live in the world's most energy-efficient apartment buildings...

Urban density allows half of humanity to live on 2.8 per cent of the land ... Consider just the infrastructure efficiencies. According to a 2004 UN report: ''The concentration of population and enterprises in urban areas greatly reduces the unit cost of piped water, sewers, drains, roads, electricity, garbage collection, transport, health care, and schools.''...

[T]he nationally subsidised city of Manaus in northern Brazil ''answers the question'' of how to stop deforestation: give people decent jobs. Then they can afford houses, and gain security. One hundred thousand people who would otherwise be deforesting the jungle around Manaus are now prospering in town making such things as mobile phones and televisions...

Of course, fast-growing cities are far from an unmitigated good. They concentrate crime, pollution, disease and injustice as much as business, innovation education and entertainment ... But if they are overall a net good for those who move there, it is because cities offer more than just jobs. They are transformative: in the slums, as well as the office towers and leafy suburbs, the progress is from hick to metropolitan to cosmopolitan...

Question: Which one of the following statements would undermine the author's stand regarding the greenness of cities?

option 1. The compactness of big cities in the West increases the incidence of violent crime.

option 2. The high density of cities leads to an increase in carbon dioxide and global warming.

option 3. Sorting through rubbish contributes to the rapid spread of diseases in the slums.

option 4. Over the last decade the cost of utilities has been increasing for city dwellers.

Correct Answer: 2

Explanation: The right answer would undermine the author's argument regarding the 'greenness of cities'. So, option 2 is the right choice; increase in carbon dioxide and global warming would contribute greatly to the change in climate (greenness of cities).

Option 1 talks about 'violent crimes', which has nothing to do with greenness of cities. It can be ruled out

Option 3 is also incorrect. The rapid spread of diseases in the slum would only affect the people in the slums and not the greenness of the cities.

Option 4 is also irrelevant. The increasing cost of utilities has nothing to do with greenness of the cities.

Directions: Read the passage and answer the following question.

The magic of squatter cities is that they are improved steadily and gradually by their residents. To a planner's eye, these cities look chaotic. I trained as a biologist and to my eye, they look organic. Squatter cities are also unexpectedly green. They have maximum density – 1 million people per square mile in some areas of Mumbai – and have minimum energy and material use. People get around by foot, bicycle, rickshaw, or the universal shared taxi.

Not everything is efficient in the slums, though. In the Brazilian favelas where electricity is stolen and therefore free, people leave their lights on all day. But in most slums recycling is literally a way of life. The Dharavi slum in Mumbai has 400 recycling units and 30,000 ragpickers. Six thousand tons of rubbish are sorted every day. In 2007, the Economist reported that in Vietnam and Mozambique. ''Waves of gleaners sift the sweepings of Hanoi's streets, just as Mozambiquan children pick over the rubbish of Maputo's main tip. Every city in Asia and Latin America has an industry based on gathering up old cardboard boxes.''...

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Of course, fast-growing cities are far from an unmitigated good. They concentrate crime, pollution, disease and injustice as much as business, innovation education and entertainment ... But if they are overall a net good for those who move there, it is because cities offer more than just jobs. They are transformative: in the slums, as well as the office towers and leafy suburbs, the progress is from hick to metropolitan to cosmopolitan...

Question: According to the passage, squatter cities are environment-friendly for all of the following reasons EXCEPT:

option 1. their transportation is energy efficient.

option 2. they recycle material.

option 3. they sort out garbage.

option 4. their streets are kept clean.

Correct Answer: 4

Explanation: Options 1, 2 and 3 would help squatter cities be more environment friendly by reducing pollution. Recycling material, sorting out garbage, and energy efficient transportation can indeed have a huge positive impact on environment. Option 4 does not reflect a greater picture of environment friendly approach; keeping the streets clean may mean that the wastes are somewhere dumped in the environment near the local community, hence the answer.

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Question: We can infer that Calthorpe's statement "still jars" with most people because most people

option 1. do not consider cities to be eco-friendly places.

option2. regard cities as places of disease and crime.

option 3. do not regard cities as good places to live in.

option4. consider cities to be very crowded and polluted.

Correct Answer: 1

Explanation: Calthrope's major contention is that cites are eco-friendly as they consume less resources than people living in places that have lower population densities - "The city is the most environmentally benign form of human settlement. Each city dweller consumes less land, less energy, less water, and produces less pollution than his counterpart in settlements of lower densities." Verb 'jar' means to disturb or be at variance. So, the right option would be opposite to Calthrope's viewpoints, hence option 1.

Other options are not directly the reasons why the statement jars with most people. Option 4 is weak due to word 'crowded'.

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Question: From the passage it can be inferred that cities are good places to live in for all of the following reasons EXCEPT that they:

option 1. help prevent destruction of the environment.

option 2. offer employment opportunities.

option 3. a have suburban areas as well as office areas.

option 4. contribute to the cultural transformation of residents.

Correct Answer: 3

Explanation: Options 1 and 2 can be inferred from, "One hundred thousand people who would otherwise be deforesting the jungle around Manaus are now prospering in town making such things as mobile phones and televisions..."

Option 4 can be inferred from, "But if they are overall a net good for those who move there, it is because cities offer more than just jobs. They are transformative."

Option 3 cannot be inferred as a reason why the author feels that cities are good places to live in, hence the answer.

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Question: In the context of the passage, the author refers to Manaus in order to

option 1. explain how urban areas help the environment.

option 2. describe the infrastructure efficiencies of living in a city.

option3. promote cities as employment hubs for people.

option 4. explain where cities source their labour for factories.

Correct Answer: 1

Explanation: Refer to the second last paragraph, "[T]he nationally subsidised city of Manaus in northern Brazil 'answers the question' of how to stop deforestation ... now prospering in town making such things as mobile phones and televisions..." The author refers to Manaus to show how an entire community of people whose major job was deforestation of the jungle have now been able to prosper by making things such as mobile phones and televisions. Option 1 is the answer.

Option 4 does not find support from the passage. Other options are not the reason for the author to mention about 'Manaus'.

Directions: Read the passage and answer the following question.

For two years, I tracked down dozens of . . . Chinese in Upper Egypt [who were] selling lingerie. In a deeply conservative region, where Egyptian families rarely allow women to work or own businesses, the Chinese flourished because of their status as outsiders. They didn't gossip, and they kept their opinions to themselves. In a New Yorker article entitled ''Learning to Speak Lingerie,'' I described the Chinese use of Arabic as another non-threatening characteristic. I wrote, ''Unlike Mandarin, Arabic is inflected for gender, and Chinese dealers, who learn the language strictly by ear, often pick up speech patterns from female customers. I've come to think of it as the lingerie dialect, and there's something disarming about these Chinese men speaking in the feminine voice.''. . .

When I wrote about the Chinese in the New Yorker, most readers seemed to appreciate the unusual perspective. But as I often find with topics that involve the Middle East, some people had trouble getting past the black-and-white quality of a byline. ''This piece is so orientalist I don't know what to do.'' Aisha Gani, a reporter who worked at The Guardian, tweeted. Another colleague at the British paper, Iman Amrani, agreed: ''I wouldn't have minded an article on the subject written by an Egyptian woman – probably would have had better insight.'' . . .

As an MOL (man of language), I also take issue with this kind of essentialism. Empathy and understanding are not inherited traits, and they are not strictly tied to gender and race. An individual who wrestles with a difficult language can learn to be more sympathetic to outsiders and open to different experiences of the world. This learning process – the embarrassments, the frustrations, the gradual sense of understanding and connection – is invariably transformative. In Upper Egypt, the Chinese experience of struggling to learn Arabic and local culture had made them much more thoughtful. In the same way, I was interested in their lives not because of some kind of voyeurism, but because I had also experienced Egypt and Arabic as an outsider. And both the Chinese and the Egyptians welcomed me because I spoke their languages. My identity as a white male was far less important than my ability to communicate.

And that easily lobbed word – ''Orientalist'' – hardly captures the complexity of our interactions. What exactly is the dynamic when a man from Missouri observes a Zhejiang native selling lingerie to an Upper Egyptian woman? . . . If all of us now stand beside the same river, speaking in ways we all understand, who's looking east and who's looking west? Which way is Oriental?

For all of our current interest in identity politics, there's no corresponding sense of identity linguistics. You are what you speak – the words that run throughout your mind are at least as fundamental to your selfhood as is your ethnicity or your gender. And sometimes it's healthy to consider human characteristics that are not inborn, rigid, and outwardly defined. After all, you can always learn another language and change who you are.

Question: A French ethnographer decides to study the culture of a Nigerian tribe. Which of the following is most likely to be the view of the author of the passage?

option 1. The author would encourage the ethnographer, but ash him/her to first learn the language of the Nigerian tribe s/he wishes to study.

option 2. The author would discourage the ethnographer from conducting the study as Nigerian ethnographers can better understand the tribe.

option 3. The author would encourage the ethnographer, but ask him/her to be mindful of his/her racial and gender identity in the process.

option 4. The author would encourage the ethnographer and recommend him/her to hire a good translator for the purpose of holding interviews.

Correct Answer: 1

Explanation: This is an application based question. The author is of the opinion that learning the language of local cultures would help bridge cultural barriers. So, if a French ethnographer decides to study the culture of a Nigerian tribe, the author would unarguably want him to learn their language, as this will help the ethnographer better study the tribe. Option 1 is the answer.

The other options do not find support from the context of the passage. The author is much more concerned about the ability to communicate than racial and gender identity of the person. Option 4 is against the author's point of view.

Directions: Read the passage and answer the following question.

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As an MOL (man of language), I also take issue with this kind of essentialism. Empathy and understanding are not inherited traits, and they are not strictly tied to gender and race. An individual who wrestles with a difficult language can learn to be more sympathetic to outsiders and open to different experiences of the world. This learning process – the embarrassments, the frustrations, the gradual sense of understanding and connection – is invariably transformative. In Upper Egypt, the Chinese experience of struggling to learn Arabic and local culture had made them much more thoughtful. In the same way, I was interested in their lives not because of some kind of voyeurism, but because I had also experienced Egypt and Arabic as an outsider. And both the Chinese and the Egyptians welcomed me because I spoke their languages. My identity as a white male was far less important than my ability to communicate.

And that easily lobbed word – ''Orientalist'' – hardly captures the complexity of our interactions. What exactly is the dynamic when a man from Missouri observes a Zhejiang native selling lingerie to an Upper Egyptian woman? . . . If all of us now stand beside the same river, speaking in ways we all understand, who's looking east and who's looking west? Which way is Oriental?

For all of our current interest in identity politics, there's no corresponding sense of identity linguistics. You are what you speak – the words that run throughout your mind are at least as fundamental to your selfhood as is your ethnicity or your gender. And sometimes it's healthy to consider human characteristics that are not inborn, rigid, and outwardly defined. After all, you can always learn another language and change who you are.

Question: According to the passage, which of the following is not responsible for language's ability to change us?

option 1. Language's ability to mediate the impact of identity markers one is born with.

option 2. The ups and downs involved in the course of learning a language.

option3. The twists and turns in the evolution of language over time.

option 4. Language's intrinsic connection to our notions of self and identity.

Correct Answer: 3

Explanation: Option 3 is the right choice because it has nothing to do with language's ability to change us. The author makes no mention about the inherent ability of language to evolve over time to change a person.

The other options can be inferred from the passage.

Option 1 can be inferred from, "My identity as a white male was far less important than my ability to communicate ... After all, you can always learn another language and change who you are."

Option 2 can be inferred from, "This learning process – the embarrassments, the frustrations, the gradual sense of understanding and connection – is invariably transformative."

Option 4 can be inferred from "You are what you speak – the words that run throughout your mind are at least as fundamental to your selfhood as is your ethnicity or your gender." You speak a language, as a result people identify you as someone similar to them, so they welcome you.

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Question: Which of the following can be inferred from the author's claim, "Which way is Oriental?"

option 1. Goodwill alone mitigates cultural hierarchies and barriers.

option 2. Learning another language can mitigate cultural hierarchies and barriers.

option 3. Orientalism is a discourse of the past, from colonial times, rarely visible today.

option 4. Globalisation has mitigated cultural hierarchies and barriers.

Correct Answer: 2

Explanation: The author is of the opinion that if people in different parts of the world all speak the language that all of them understand, then the east west divide would be broken. The word Orientalism has been used here in the sense of identity. Option 2 correctly encapsulates the arguments made by the author.

The author makes no claim about goodwill or globalisation, so options 1 and 4 are incorrect. There is no support to the statement that Orientalism is rarely visible today.

Directions: Read the passage and answer the following question.

For two years, I tracked down dozens of . . . Chinese in Upper Egypt [who were] selling lingerie. In a deeply conservative region, where Egyptian families rarely allow women to work or own businesses, the Chinese flourished because of their status as outsiders. They didn't gossip, and they kept their opinions to themselves. In a New Yorker article entitled ''Learning to Speak Lingerie,'' I described the Chinese use of Arabic as another non-threatening characteristic. I wrote, ''Unlike Mandarin, Arabic is inflected for gender, and Chinese dealers, who learn the language strictly by ear, often pick up speech patterns from female customers. I've come to think of it as the lingerie dialect, and there's something disarming about these Chinese men speaking in the feminine voice.''. . .

When I wrote about the Chinese in the New Yorker, most readers seemed to appreciate the unusual perspective. But as I often find with topics that involve the Middle East, some people had trouble getting past the black-and-white quality of a byline. ''This piece is so orientalist I don't know what to do.'' Aisha Gani, a reporter who worked at The Guardian, tweeted. Another colleague at the British paper, Iman Amrani, agreed: ''I wouldn't have minded an article on the subject written by an Egyptian woman – probably would have had better insight.'' . . .

As an MOL (man of language), I also take issue with this kind of essentialism. Empathy and understanding are not inherited traits, and they are not strictly tied to gender and race. An individual who wrestles with a difficult language can learn to be more sympathetic to outsiders and open to different experiences of the world. This learning process – the embarrassments, the frustrations, the gradual sense of understanding and connection – is invariably transformative. In Upper Egypt, the Chinese experience of struggling to learn Arabic and local culture had made them much more thoughtful. In the same way, I was interested in their lives not because of some kind of voyeurism, but because I had also experienced Egypt and Arabic as an outsider. And both the Chinese and the Egyptians welcomed me because I spoke their languages. My identity as a white male was far less important than my ability to communicate.

And that easily lobbed word – ''Orientalist'' – hardly captures the complexity of our interactions. What exactly is the dynamic when a man from Missouri observes a Zhejiang native selling lingerie to an Upper Egyptian woman? . . . If all of us now stand beside the same river, speaking in ways we all understand, who's looking east and who's looking west? Which way is Oriental?

For all of our current interest in identity politics, there's no corresponding sense of identity linguistics. You are what you speak – the words that run throughout your mind are at least as fundamental to your selfhood as is your ethnicity or your gender. And sometimes it's healthy to consider human characteristics that are not inborn, rigid, and outwardly defined. After all, you can always learn another language and change who you are.

Question: The author's critics would argue that:

option 1. Linguistic politics can be erased.

option 2. Orientalism cannot be practiced by Egyptians.

option 3. Language is insufficient to bridge cultural barriers.

Option 4. Empathy can overcome identity politics.

Correct Answer: 3

Explanation: "Empathy and understanding are not inherited traits, and they are not strictly tied to gender and race. An individual who wrestles with a difficult language can learn to be more sympathetic to outsiders and open to different experiences of the world." According to the author, cultural barriers can be broken down and an outsider can ingrain himself with the local culture by learning the language of the culture. So, the critics would say something contrary to the author's view.

The author has made no mention of 'linguistic politics'. Other options are not related to the author's point of view. Only option 3 is in conflict with the author's view; hence the answer.

Directions: Read the passage and answer the following question.

Around the world, capital cities are disgorging bureaucrats. In the post-colonial fervour of the 20th century, coastal capitals picked by trade-focused empires were spurned for ''regionally neutral'' new ones ... But decamping wholesale is costly and unpopular; governments these days prefer piecemeal dispersal. The trend reflects how the world has changed. In past eras, when information travelled at a snail's pace, civil servants had to cluster together. But now desk-workers can ping emails and video-chat around the world. Travel for face-to-face meetings may be unavoidable, but transport links, too, have improved ...

Proponents of moving civil servants around promise countless benefits. It disperses the risk that a terrorist attack or natural disaster will cripple an entire government. Wonks in the sticks will be inspired by new ideas that walled-off capitals cannot conjure up. Autonomous regulators perform best far from the pressure and lobbying of the big city. Some even hail a cure for ascendant cynicism and populism. The unloved bureaucrats of faraway capitals will become as popular as firefighters once they mix with regular folk.

Beyond these sunny visions, dispersing central-government functions usually has three specific aims: to improve the lives of both civil servants and those living in clogged capitals; to save money; and to redress regional imbalances. The trouble is that these goals are not always realised.

The first aim – improving living conditions – has a long pedigree. After the second world war Britain moved thousands of civil servants to ''agreeable English country towns'' as London was rebuilt. But swapping the capital for somewhere smaller is not always agreeable. Attrition rates can exceed 80% ... The second reason to pack bureaucrats off is to save money. Office space costs far more in capitals ... Agencies that are moved elsewhere can often recruit better workers on lower salaries than in capitals, where well-paying multinationals mop up talent.

The third reason to shift is to rebalance regional inequality ... Norway treats federal jobs as a resource every region deserves to enjoy, like profits from oil. Where government jobs go, private ones follow ... Sometimes the aim is to fulfil the potential of a country's second-tier cities. Unlike poor, remote places, bigger cities can make the most of relocated government agencies, linking them to local universities and businesses and supplying a better-educated workforce. The decision in 1946 to setup America's Centres for Disease Control in Atlanta rather than Washington, D.C., has transformed the city into a hub for health-sector research and business.

The dilemma is obvious. Pick small, poor towns, and areas of high unemployment get new jobs, but it is hard to attract the most qualified workers; opt for larger cities with infrastructure and better-qualified residents, and the country's most deprived areas see little benefit...

Others contend that decentralisation begets corruption by making government agencies less accountable ... A study in America found that state-government corruption is worse when the

state capital is isolated – journalists, who tend to live in the bigger cities, become less watchful of those in power.

Question: The "long pedigree" of the aim to shift civil servants to improve their living standards implies that this move

option 1. is supported by politicians and the ruling elites.

option 2. is not a new idea and has been tried in the past.

option 3. has become common practice in several countries worldwide.

option 4. takes a long time to achieve its intended outcomes.

Correct Answer: 2

Explanation: 'Pedigree' means history. So, 'long pedigree' here conveys that the idea of improving living conditions has been touted with a lot of times in the past. Option 2 is the answer.

Directions: Read the passage and answer the following question.

Around the world, capital cities are disgorging bureaucrats. In the post-colonial fervour of the 20th century, coastal capitals picked by trade-focused empires were spurned for ''regionally neutral'' new ones ... But decamping wholesale is costly and unpopular; governments these days prefer piecemeal dispersal. The trend reflects how the world has changed. In past eras, when information travelled at a snail's pace, civil servants had to cluster together. But now desk-workers can ping emails and video-chat around the world. Travel for face-to-face meetings may be unavoidable, but transport links, too, have improved ...

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Others contend that decentralisation begets corruption by making government agencies less accountable ... A study in America found that state-government corruption is worse when the

state capital is isolated – journalists, who tend to live in the bigger cities, become less watchful of those in power.

Question: The "dilemma" mentioned in the passage refers to

option 1. relocating government agencies to boost growth in remote areas with poor amenities or to relatively larger cities with good amenities.

option 2. keeping government agencies in the largest city with good infrastructure or moving them to a remote area with few amenities.

option 3. encouraging private enterprises to relocate to smaller towns or not incentivising them in order to keep government costs in those towns low.

option 4. concentrating on decongesting large cities or focusing on boosting employment in relatively larger cities.

Correct Answer: 1

Explanation: The dilemma mentioned is whether to pick small towns or opt for larger cities - "The dilemma is obvious. Pick small, poor towns ... opt for larger cities with infrastructure..." Option 1 is the answer.

Option 2 mentions about "the largest city" whereas the passage mentions about "larger cities".

Option 3 does not find support from the passage due to words "private enterprises".

Option 4 does not relate to the dilemma; it makes no mention about allotting highly qualified workers to smaller cities.

Directions: Read the passage and answer the following question.

Around the world, capital cities are disgorging bureaucrats. In the post-colonial fervour of the 20th century, coastal capitals picked by trade-focused empires were spurned for ''regionally neutral'' new ones ... But decamping wholesale is costly and unpopular; governments these days prefer piecemeal dispersal. The trend reflects how the world has changed. In past eras, when information travelled at a snail's pace, civil servants had to cluster together. But now desk-workers can ping emails and video-chat around the world. Travel for face-to-face meetings may be unavoidable, but transport links, too, have improved ...

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The first aim – improving living conditions – has a long pedigree. After the second world war Britain moved thousands of civil servants to ''agreeable English country towns'' as London was rebuilt. But swapping the capital for somewhere smaller is not always agreeable. Attrition rates can exceed 80% ... The second reason to pack bureaucrats off is to save money. Office space costs far more in capitals ... Agencies that are moved elsewhere can often recruit better workers on lower salaries than in capitals, where well-paying multinationals mop up talent.

The third reason to shift is to rebalance regional inequality ... Norway treats federal jobs as a resource every region deserves to enjoy, like profits from oil. Where government jobs go, private ones follow ... Sometimes the aim is to fulfil the potential of a country's second-tier cities. Unlike poor, remote places, bigger cities can make the most of relocated government agencies, linking them to local universities and businesses and supplying a better-educated workforce. The decision in 1946 to setup America's Centres for Disease Control in Atlanta rather than Washington, D.C., has transformed the city into a hub for health-sector research and business.

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Others contend that decentralisation begets corruption by making government agencies less accountable ... A study in America found that state-government corruption is worse when the

state capital is isolated – journalists, who tend to live in the bigger cities, become less watchful of those in power.

Question: People who support decentralising central government functions are LEAST likely to cite which of the following reasons for their view?

option 1. It reduces expenses as infrastructure costs and salaries are lower in smaller cities.

option 2. More independence could be enjoyed by regulatory bodies located away from political centres.

option 3. Policy makers may benefit from fresh thinking in a new environment.

option 4. It could weaken the nexus between bureaucrats and media in the capital.

Correct Answer: 4

Explanation: It is mentioned, "Autonomous regulators perform best far from the pressure and lobbying of the big city." So, options 2 and 3 stand valid.

Option 1 gets support from, "The second reason to pack bureaucrats off is to save money. Office space costs far more in capitals ... Agencies that are moved elsewhere can often recruit better workers on lower salaries than in capitals, where well-paying multinationals mop up talent."

Option 4 is not a reason given in support of decentralisation.

Directions: Read the passage and answer the following question.

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state capital is isolated – journalists, who tend to live in the bigger cities, become less watchful of those in power.

Question: According to the passage, colonial powers located their capitals

option1. where they had the densest populations.

option 2. to promote their trading interests.

option 3. based on political expediency.

option 4. to showcase their power and prestige.

Correct Answer: 2

Explanation: The answer can be derived from the first paragraph, "In the post-colonial fervour of the 20th century, coastal capitals picked by trade-focused empires were spurned for regionally neutral new ones…" Option 2 is the right choice; colonial powers were focussed on trade.

Directions: Read the passage and answer the following question.

Around the world, capital cities are disgorging bureaucrats. In the post-colonial fervour of the 20th century, coastal capitals picked by trade-focused empires were spurned for ''regionally neutral'' new ones ... But decamping wholesale is costly and unpopular; governments these days prefer piecemeal dispersal. The trend reflects how the world has changed. In past eras, when information travelled at a snail's pace, civil servants had to cluster together. But now desk-workers can ping emails and video-chat around the world. Travel for face-to-face meetings may be unavoidable, but transport links, too, have improved ...

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Others contend that decentralisation begets corruption by making government agencies less accountable ... A study in America found that state-government corruption is worse when the

state capital is isolated – journalists, who tend to live in the bigger cities, become less watchful of those in power.

Question: According to the author, relocating government agencies has not always been a success for all of the following reasons EXCEPT:

option1. a rise in pollution levels and congestion in the new locations.

option 2. high staff losses, as people may not be prepared to move to smaller towns.

option 3. the difficulty of attracting talented, well-skilled people in more remote areas.

option 4. increased avenues of corruption away from the capital city.

Correct Answer: 1

Explanation: According to the author, relocating government agencies has not always been a success. Option 1 is nowhere mentioned as a reason for the same and has to be the right choice.

Other options can be inferred from the following lines, "Pick small, poor towns, and areas of high unemployment get new jobs, but it is hard to attract the most qualified workers ... Others contend that decentralisation begets corruption by making government agencies less accountable."

Question: Directions: The four sentences (labelled 1, 2, 3, 4) given below, when properly sequenced would yield a coherent paragraph. Decide on the proper sequence of the order of the sentences and key in the sequence of the four numbers as your answer.

1. Such a belief in the harmony of nature requires a purpose presumably imposed by the goodness and wisdom of a deity.

2. These parts, all fit together into an integrated, well-ordered system that was created by design.

3. Historically, the notion of a balance of nature is part observational, part metaphysical, and not scientific in any way.

4. It is an example of an ancient belief system called teleology, the notion that what we call nature has a predetermined destiny associated with its component parts.

Answer : 3421The paragraph talks about the ancient belief system called telelogy which describes how nature has a predetermined destiny associated with its component parts, and how these parts fit together into an ordered system.

Pronoun 'it' in sentence 4 refers to 'the notion of balance' in sentence 3, which begins the sequence. Words 'these parts' in sentence 2 refer to 'component parts' in sentence 4. The link becomes '3-4-2'. Last come sentence 1 as it gives the necessary condition required to have a belief that has been explained in sentences 4 and 2 ('such a belief' in sentence 1 will follow the link '4-2' as sentence 4 mentions 'an ancient belief system). Thus, the correct sequence is 3421.

Correct Answer: 3421

Explanation: The paragraph talks about the ancient belief system called telelogy which describes how nature has a predetermined destiny associated with its component parts, and how these parts fit together into an ordered system.

Pronoun 'it' in sentence 4 refers to 'the notion of balance' in sentence 3, which begins the sequence. Words 'these parts' in sentence 2 refer to 'component parts' in sentence 4. The link becomes '3-4-2'. Last come sentence 1 as it gives the necessary condition required to have a belief that has been explained in sentences 4 and 2 ('such a belief' in sentence 1 will follow the link '4-2' as sentence 4 mentions 'an ancient belief system). Thus, the correct sequence is 3421.

Question: <u>Directions:</u> The four sentences (labelled 1, 2, 3, 4) given below, when properly sequenced would yield a coherent paragraph. Decide on the proper sequence of the order of the sentences and key in the sequence of the four numbers as your answer.

1. Conceptualisation of 'women's time' as contrary to clock-time and clock-time as synonymous with economic rationalism are two of the deleterious results of this representation.

2. While dichotomies of 'men's time', 'women's time', clock-time, and caring time can be analytically useful, this article argues that everyday caring practices incorporate a multiplicity of times; and both men and women can engage in these multiple-times.

3. When the everyday practices of working sole fathers and working sole mothers are carefully examined to explore conceptualisations of gendered time, it is found that caring time is often more focused on the clock than generally theorised.

4. Clock-time has been consistently represented in feminist literature as a masculine artefact representative of a 'time is money' perspective.

Answer : 4132The paragraph talks about the deleterious results of introducing the concept of women's time, and how the everyday practices of both men and women incorporate a multiplicity of times.

Sentence 4 introduces the concept of clock time. This is followed by 1 as the words 'this representation' refer to 'a masculine artefact representative' mentioned in 4. Then comes sentence 3; it explains how the concept of clock time actually works out for working sole fathers and working sole mothers. Sentence 2 concludes the sequence - 'everyday caring practices incorporate a multiplicity of times'. The correct sequence is 4132.

Correct Answer: 4132

Explanation: The paragraph talks about the deleterious results of introducing the concept of women's time, and how the everyday practices of both men and women incorporate a multiplicity of times.

Sentence 4 introduces the concept of clock time. This is followed by 1 as the words 'this representation' refer to 'a masculine artefact representative' mentioned in 4. Then comes sentence 3; it explains how the concept of clock time actually works out for working sole fathers and working sole mothers. Sentence 2 concludes the sequence - 'everyday caring practices incorporate a multiplicity of times'. The correct sequence is 4132.

Question: Directions: The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage.

Privacy-challenged office workers may find it hard to believe, but open-plan offices and cubicles were invented by architects and designers who thought that to break down the social walls that divide people, you had to break down the real walls, too. Modernist architects saw walls and rooms as downright fascist. The spaciousness and flexibility of an open plan would liberate homeowners and office dwellers from the confines of boxes. But companies took up their idea less out of a democratic ideology than a desire to pack in as many workers as they could. The typical open-plan office of the first half of the 20th century was a white-collar assembly line. Cubicles were interior designers' attempt to put some soul back in.

option 1. Wall-free office spaces did not quite work out as companies don't believe in democratic ideology.

option2. Wall-free office spaces could have worked out the way their utopian inventors intended had companies cared for workers' satisfaction.

option 3. Wall-free office spaces did not quite work out the way their utopian inventors intended, as they became tools for exploitation of labor.

option 4. Wall-free office spaces did not quite work out as desired and therefore cubicles came into being.

Correct Answer: 3

Explanation: 1. It is nowhere mentioned that "companies don't believe in democratic ideology"; the context only states that 'companies took up their idea less out of a democratic ideology.'

2. The passage makes no mention about workers' satisfaction.

3. The main idea of the passage is that while the inventors of the open-plan offices had the liberation of office dwellers from boxes in mind, the companies used it to pack as much people as possible inside. "But companies took up their idea less out of a democratic ideology than a desire to pack in as many workers as they could."

4. This option misrepresents the information. Cubicles existed earlier and only later were wall-free office spaces invented.

Question: Directions: The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage.

Language is an autapomorphy found only in our lineage, and not shared with other branches of our group such as primates. We also have no definitive evidence that any species other than Homo sapiens ever had language. However, it must be noted straightaway that 'language' is not a monolithic entity, but rather a complex bundle of traits that must have evolved over a significant time frame ... Moreover, language crucially draws on aspects of cognition that are long established in the primate lineage, such as memory: the language faculty as a whole comprises more than just the uniquely linguistic features.

option 1. Language, a derived trait found only in humans, has evolved over time and involves memory.

option 2. Language is a distinctively human feature as there is no evidence of the existence of language in any other species.

option3. Language is not a single, uniform entity but the end result of a long and complex process of linguistic evolution.

option 4. Language evolved with linguistic features building on features of cognition such as memory.

Correct Answer: 4

Explanation: 1. The passage does not convey that language has evolved over time, but that language is a bundle of traits such as memory that evolved over a period of time.

2. This option is only about language being a distinctive human feature but misses two crucial points of language being a complex bundle of traits and language drawing on aspects of cognition such as memory. This option is weak.

3. This option is also close to the right answer but it also misses the crucial point of language drawing on aspects of cognition such as memory.

4. This is correct. The passage mainly states that language is a bundle of traits such as memory that evolved over a period of time.

Question: Directions: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out. Choose its number as your answer and key it in.

option1. Ocean plastic is problematic for a number of reasons, but primarily because marine animals eat it.

option 2. The largest numerical proportion of ocean plastic falls in small size fractions.

option 3. Aside from clogging up the digestive tracts of marine life, plastic also tends to adsorb pollutants from the water column.

option 4. Plastic in the oceans is arguably one of the most important and pervasive environmental problems today.

option 5. Eating plastic has a number of negative consequences such as the retention of plastic particles in the gut for longer periods than normal food particles.

Answer : 2The passage is about the impact of ocean plastic on marine organisms. Sentence 4 introduces the topic of plastic being the most important problem of oceans. Option 1 then mentions the reason for plastic being the problem ('because marine animals eat it'). Sentence 5 mentions about the consequences of marine animals eating ocean plastic. Sentence 3 further elaborates sentence 5 - "aside from clogging up the digestive tracts..." The sequence becomes 4153. Sentence 2 does not link with other sentences and is the odd one out.

Correct Answer: 2

Explanation: The passage is about the impact of ocean plastic on marine organisms. Sentence 4 introduces the topic of plastic being the most important problem of oceans. Option 1 then mentions the reason for plastic being the problem ('because marine animals eat it'). Sentence 5 mentions about the consequences of marine animals eating ocean plastic. Sentence 3 further elaborates sentence 5 - "aside from clogging up the digestive tracts..." The sequence becomes 4153. Sentence 2 does not link with other sentences and is the odd one out.

Question: Directions: The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage.

Social movement organizations often struggle to mobilize supporters from allied movements in their efforts to achieve critical mass. Organizations with hybrid identities - those whose organizational identities span the boundaries of two or more social movements, issues, or identities - are vital to mobilizing these constituencies. Studies of the post-9/11 U.S. antiwar movement show that individuals with past involvement in non-anti-war movements are more likely to join hybrid organizations than are Individuals without involvement in non-anti-war movements. In addition, they show that organizations with hybrid identities occupy relatively more central positions in inter-organizational contact networks within the antiwar movement and thus recruit significantly more participants in demonstrations than do non-hybrid organizations.

option 1. Post 9/11 studies show that people who are involved in non-anti-war movements are likely to join hybrid organizations.

option2. Hybrid organizations attract individuals that are deeply involved in anti-war movements.

option 3. Movements that work towards social change often find it difficult to mobilize a critical mass of supporters.

option 4. Organizations with hybrid identities are able to mobilize individuals with different points of view.

Correct Answer: 4

Explanation: 1. This option only states the example mentioned in the context and is not suitable as summary.

2. This is contrary to what is mentioned in the passage. Hybrid organisations attract individuals that are deeply involved in "non-anti-war movements" and not "anti-war movements".

3. This option does not cover the central idea - hybrid organisations are vital to providing participants in social movements.

4. The passage conveys that it is easier for hybrid organizations to attract people than it is for non-hybrid organizations because hybrid organizations contain individuals with multiple points of views on different movements and issues. The example of 9/11 studies also shows support to the same case. This option is the right answer.

Question: <u>Directions:</u> Five sentences related to a topic are given below in a jumbled order. Four of them form a coherent and unified paragraph. Identify the odd sentence that does not go with the four. Key in the number of the option that you choose.

option 1. Socrates told us that 'the unexamined life is not worth living' and that to 'know thyself' is the path to true wisdom.

option 2. It suggests that you should adopt an ancient rhetorical method favored by the likes of Julius Caesar and known as 'illeism' - or speaking about yourself in the third person.

option 3. Research has shown that people who are prone to rumination also often suffer from impaired decision making under pressure and are at a substantially increased risk of depression.

option 4. Simple rumination - the process of churning your concerns around in your head - is not the way to achieve self-realization.

option 5. The idea is that this small change in perspective can clear your emotional fog, allowing you to see past your biases.

Answer : 1The paragraph talks about how rumination is not the way to achieve-self realization, but another method favored by Caesar, 'illeism' would help a person see past his biases. Sentence 4 introduces the idea of rumination. Next is 3 as it indicates the results of the research done on rumination. Then sentence 2 suggests an alternative to rumination, i.e. illeism, and sentence 5 follows stating the consequences of adopting illeism (words 'speaking about yourself in the third person' in 2 connect with 'allowing you to see past your biases' in 5). The sequence becomes 4325. Sentence 1 is the odd one out as it does not fit in the sequence.

Correct Answer: 1

Explanation: The paragraph talks about how rumination is not the way to achieve-self realization, but another method favored by Caesar, 'illeism' would help a person see past his biases. Sentence 4 introduces the idea of rumination. Next is 3 as it indicates the results of the research done on rumination. Then sentence 2 suggests an alternative to rumination, i.e. illeism, and sentence 5 follows stating the consequences of adopting illeism (words 'speaking about yourself in the third person' in 2 connect with 'allowing you to see past your biases' in 5). The sequence becomes 4325. Sentence 1 is the odd one out as it does not fit in the sequence.

Question: Directions: The four sentences (labelled 1, 2, 3, 4) given below, when properly sequenced would yield a coherent paragraph. Decide on the proper sequence of the order of the sentences and key in the sequence of the four numbers as your answer.

1. Living things - animals and plants - typically exhibit correlational structure.

2. Adaptive behaviour depends on cognitive economy, treating objects as equivalent.

3. The information we receive from our senses, from the world, typically has structure and order, and is not arbitrary.

4. To categorize an object means to consider it equivalent to other things in that category, and different - along some salient dimension - from things that are not.

Answer : 2431Sentence 2 introduces the topic of adaptive behaviour (treating objects as equivalent). Sentence 4 follows next (consider it equivalent to other things) stating how different objects are categorized. Sentence 3 then conveys about structure and order of the information we receive while considering such categorization. Lastly, sentence 1 concludes by stating how animals and plants are equivalent to each other. The correct sequence is 2431.

Correct Answer: 2431

Explanation: Sentence 2 introduces the topic of adaptive behaviour (treating objects as equivalent). Sentence 4 follows next (consider it equivalent to other things) stating how different objects are categorized. Sentence 3 then conveys about structure and order of the information we receive while considering such categorization. Lastly, sentence 1 concludes by stating how animals and plants are equivalent to each other. The correct sequence is 2431.

Question: Directions: Five sentences related to a topic are given below. Four of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out. Choose its number as your answer and key it in.

option 1. A particularly interesting example of inference occurs in many single-panel comics.

option 2. It's the creator's participation and imagination that makes the single-panel comic so engaging and so rewarding.

option 3. Often, the humor requires you to imagine what happened in the instant immediately before or immediately after the panel you're being shown.

option 4. To get the joke, you actually have to figure out what some of these missing panels must be.

option 5. It is as though the cartoonist devised a series of panels to tell the story and has chosen to show you only one - and typically not even the funniest.

Answer : 2The paragraph is about how to understand the humor behind the single-panel comics. Sentences 3, 4 and 5 are connected; refer to the common pronoun "you" (as a reader). They convey that we have to imagine or figure out humor in single-panel comics. Sentences 1 and 2 (both about single-panel comics) are very close to be placed at the first place, but as the other sentences convey that humor requires imagination or inference in single-panel comics, sentence 1 relates the most to the context. Sentence 2 is the odd one out. Moreover, it talks about "creator's participation and imagination", but the other sentences convey that the creator hides something and the viewer uses imagination to discover it.

Correct Answer: 2

Explanation: The paragraph is about how to understand the humor behind the single-panel comics. Sentences 3, 4 and 5 are connected; refer to the common pronoun "you" (as a reader). They convey that we have to imagine or figure out humor in single-panel comics. Sentences 1 and 2 (both about single-panel comics) are very close to be placed at the first place, but as the other sentences convey that humor requires imagination or inference in single-panel comics, sentence 1 relates the most to the context. Sentence 2 is the odd one out. Moreover, it talks about "creator's participation and imagination", but the other sentences convey that the creator hides something and the viewer uses imagination to discover it.

Question: Directions: The four sentences (labelled 1, 2, 3, 4) given below, when properly sequenced would yield a coherent paragraph. Decide on the proper sequence of the order of the sentences and key in the sequence of the four numbers as your answer.

1. To the uninitiated listener, atonal music can sound like chaotic, random noise.

2. Atonality is a condition of music in which the constructs of the music do not 'live' within the confines of a particular key signature, scale, or mode.

3. After you realize the amount of knowledge, skill, and technical expertise required to compose or perform it, your tune may change, so to speak.

4. However, atonality is one of the most important movements in 20th century music.

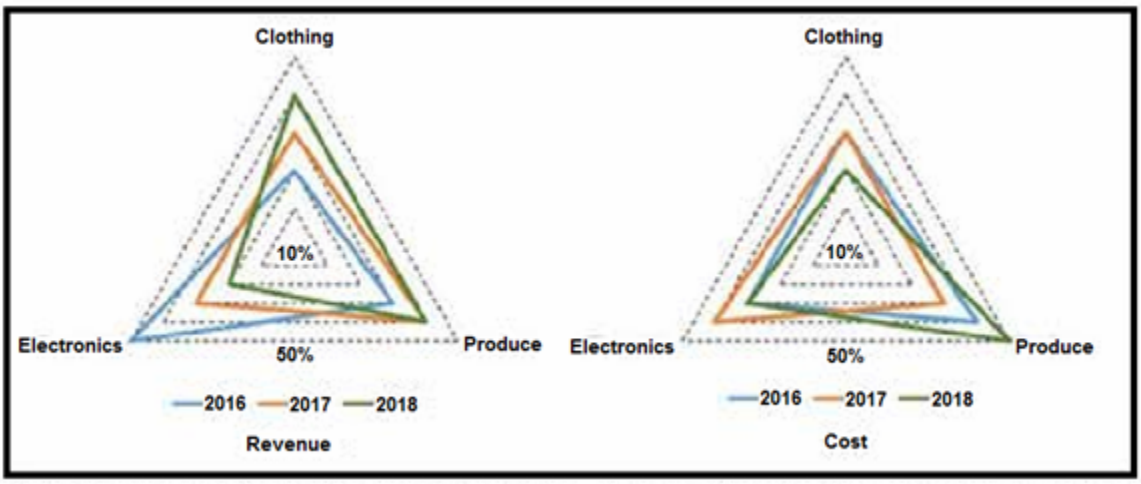
Answer : 2143The paragraph conveys that though atonal music can sometimes sound random and chaotic, there is a lot of knowledge and skill that is required to perform atonal music. Sentence 2 begins the sequence by introducing the term atonality. Sentence 1 then mentions about misconception about atonal music. Sentence 4 ('however') contradicts the opinion mentioned in 1 and declares atonal music as an important movement. At last, sentence 3 explains how the uninitiated listener can change his views about atonal music (after you realize the amount of knowledge, skill, and technical expertise required). The correct sequence is 2143.

Correct Answer: 2143

Explanation: The paragraph conveys that though atonal music can sometimes sound random and chaotic, there is a lot of knowledge and skill that is required to perform atonal music. Sentence 2 begins the sequence by introducing the term atonality. Sentence 1 then mentions about misconception about atonal music. Sentence 4 ('however') contradicts the opinion mentioned in 1 and declares atonal music as an important movement. At last, sentence 3 explains how the uninitiated listener can change his views about atonal music (after you realize the amount of knowledge, skill, and technical expertise required). The correct sequence is 2143.

Directions: Study the following information carefully and answer the given question.

A large store has only three departments, Clothing, Produce and Electronics. The following figures show the percentages of revenue and cost from the three departments for the years 2016, 2017 and 2018. The dotted lines depict percentage levels. So, for example, in 2016, 50% of store's revenue came from its Electronics department while 40% of its costs were incurred in the Produce department.



In this setup, profit is computed as (revenue – cost) and percentage profit as profit/cost × 100%.
It is known that

1. The percentage profit for the store in 2016 was 100%.
2. The store's revenue doubled from 2016 to 2017, and its cost doubled from 2016 to 2018.
3. There was no profit from the Electronics department in 2017.
4. In 2018, the revenue from the Clothing department was the same as the cost incurred in the Produce department.

Question: What was the percentage profit of the store in 2018?

Answer : 25The following tables can be formed from the charts given in the question:

	Revenue				Cost			
	Clothing	Produce	Electronics		Clothing	Produce	Electronics	
2016	20	30	50		30	40	30	
2017	30	40	30		30	30	40	
2018	40	40	20		20	50	30	

Let us consider the total cost in the year 2016 as 100. Then, according to statement 1, the total revenue in 2016 must be 200.

The store's revenue doubled from 2016 to 2017. Thus, the total revenue in the year 2017 is 400.

There was no profit from the Electronics department in 2017. So, we can find the total cost in 2017 as to be 300.

Now considering statement 4, we can find the total revenue in 2018 and tabulate the following tables:

Cost							
	Clothing		Produce		Electronics		Total
2016	30%	30	40%	40	30%	30	100
2017	30%	90	30%	90	40%	120	300
2018	20%	40	50%	100	30%	60	200

Revenue							
	Clothing		Produce		Electronics		
2016	20%	40	30%	60	50%	100	200
2017	30%	120	40%	160	30%	120	400
2018	40%	100	40%	100	20%	50	250

Percentage profit of the store in 2018 = $\frac{250 - 200}{200} \times 100$ = 25%

Correct Answer: 25

Explanation: The following tables can be formed from the charts given in the question:

	Revenue				Cost			
	Clothing	Produce	Electronics		Clothing	Produce	Electronics	
2016	20	30	50		30	40	30	
2017	30	40	30		30	30	40	
2018	40	40	20		20	50	30	

Let us consider the total cost in the year 2016 as 100. Then, according to statement 1, the total revenue in 2016 must be 200.

The store's revenue doubled from 2016 to 2017. Thus, the total revenue in the year 2017 is 400.

There was no profit from the Electronics department in 2017. So, we can find the total cost in 2017 as to be 300.

Now considering statement 4, we can find the total revenue in 2018 and tabulate the following tables:

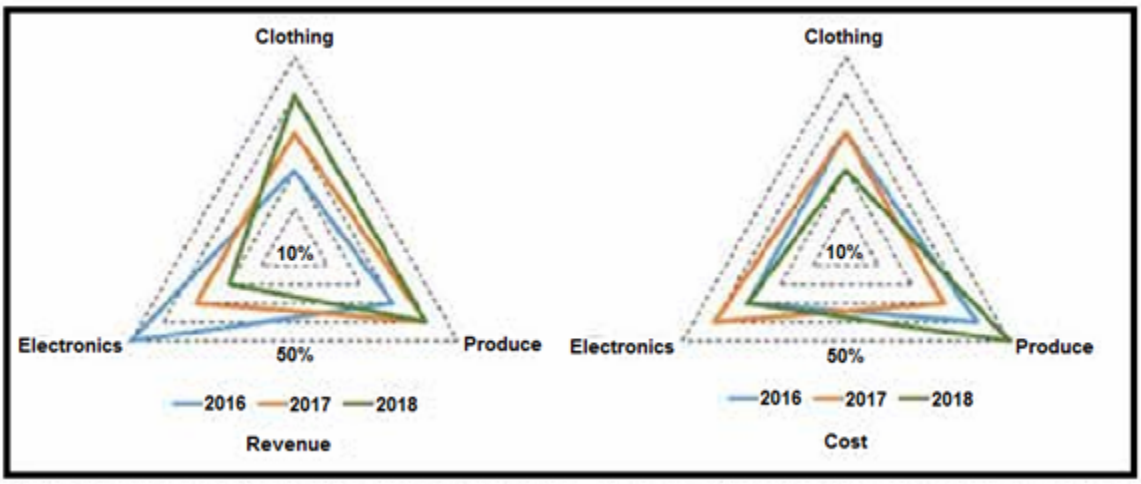
Cost							
	Clothing		Produce		Electronics		Total
2016	30%	30	40%	40	30%	30	100
2017	30%	90	30%	90	40%	120	300
2018	20%	40	50%	100	30%	60	200

Revenue							
	Clothing		Produce		Electronics		
2016	20%	40	30%	60	50%	100	200
2017	30%	120	40%	160	30%	120	400
2018	40%	100	40%	100	20%	50	250

Percentage profit of the store in 2018 = $\frac{250 - 200}{200} \times 100$ = 25%

Directions: Study the following information carefully and answer the given question.

A large store has only three departments, Clothing, Produce and Electronics. The following figures show the percentages of revenue and cost from the three departments for the years 2016, 2017 and 2018. The dotted lines depict percentage levels. So, for example, in 2016, 50% of store's revenue came from its Electronics department while 40% of its costs were incurred in the Produce department.



In this setup, profit is computed as (revenue – cost) and percentage profit as profit/cost × 100%.
It is known that

1. The percentage profit for the store in 2016 was 100%.
2. The store's revenue doubled from 2016 to 2017, and its cost doubled from 2016 to 2018.
3. There was no profit from the Electronics department in 2017.
4. In 2018, the revenue from the Clothing department was the same as the cost incurred in the Produce department.

Question: What was the ratio of revenue generated from the Produce department in 2017 to that in 2018?

option1. 9 : 16

option 2. 16 : 9

option 3. 8 : 5

option 4. 4 : 3

Correct Answer: 3

Explanation: The following tables can be formed from the charts given in the question:

	Revenue				Cost			
	Clothing	Produce	Electronics		Clothing	Produce	Electronics	
2016	20	30	50		30	40	30	
2017	30	40	30		30	30	40	
2018	40	40	20		20	50	30	

Let us consider the total cost in the year 2016 as 100. Then, according to statement 1, the total revenue in 2016 must be 200.

The store's revenue doubled from 2016 to 2017. Thus, the total revenue in the year 2017 is 400.

There was no profit from the Electronics department in 2017. So, we can find the total cost in 2017 as to be 300.

Now considering statement 4, we can find the total revenue in 2018 and tabulate the following tables:

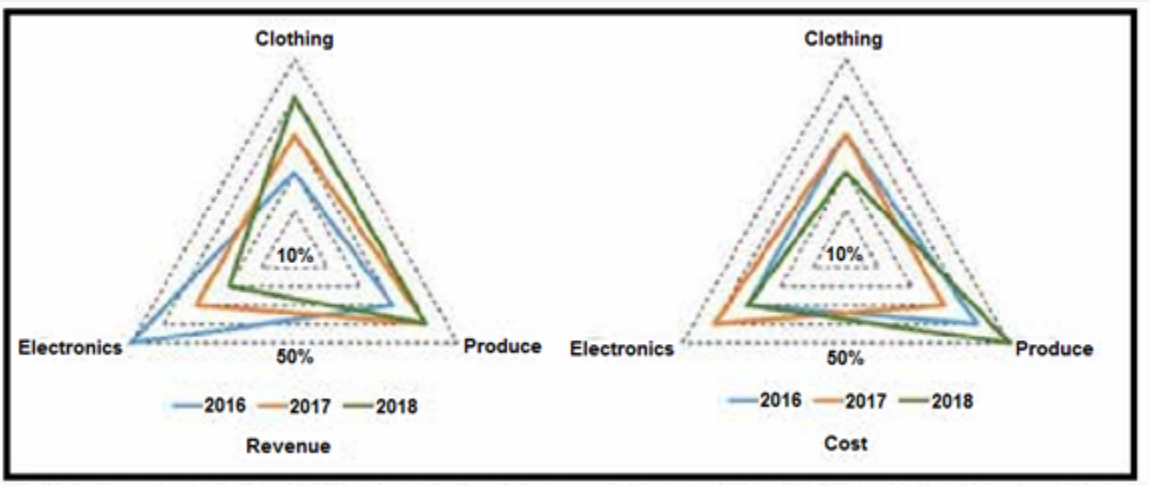
	Cost						
	Clothing		Produce		Electronics		Total
2016	30%	30	40%	40	30%	30	100
2017	30%	90	30%	90	40%	120	300
2018	20%	40	50%	100	30%	60	200

	Revenue						
	Clothing		Produce		Electronics		
2016	20%	40	30%	60	50%	100	200
2017	30%	120	40%	160	30%	120	400
2018	40%	100	40%	100	20%	50	250

Ratio of revenue generated from the Produce department in 2017 to that in 2018 = $\frac{40\% \ of \ 400}{40\% \ of \ 250}$ = 8 : 5

Directions: Study the following information carefully and answer the given question.

A large store has only three departments, Clothing, Produce and Electronics. The following figures show the percentages of revenue and cost from the three departments for the years 2016, 2017 and 2018. The dotted lines depict percentage levels. So, for example, in 2016, 50% of store's revenue came from its Electronics department while 40% of its costs were incurred in the Produce department.



In this setup, profit is computed as (revenue – cost) and percentage profit as profit/cost × 100%.
It is known that

1. The percentage profit for the store in 2016 was 100%.
2. The store's revenue doubled from 2016 to 2017, and its cost doubled from 2016 to 2018.
3. There was no profit from the Electronics department in 2017.
4. In 2018, the revenue from the Clothing department was the same as the cost incurred in the Produce department.

Question: What percentage of the total profits for the store in 2016 was from the Electronics department?

Answer : 70The following tables can be formed from the charts given in the question:

	Revenue				Cost			
	Clothing	Produce	Electronics		Clothing	Produce	Electronics	
2016	20	30	50		30	40	30	
2017	30	40	30		30	30	40	
2018	40	40	20		20	50	30	

Let us consider the total cost in the year 2016 as 100. Then, according to statement 1, the total revenue in 2016 must be 200.

The store's revenue doubled from 2016 to 2017. Thus, the total revenue in the year 2017 is 400.

There was no profit from the Electronics department in 2017. So, we can find the total cost in 2017 as to be 300.

Now considering statement 4, we can find the total revenue in 2018 and tabulate the following tables:

Cost							
	Clothing		Produce		Electronics		Total
2016	30%	30	40%	40	30%	30	100
2017	30%	90	30%	90	40%	120	300
2018	20%	40	50%	100	30%	60	200

Revenue							
	Clothing		Produce		Electronics		
2016	20%	40	30%	60	50%	100	200
2017	30%	120	40%	160	30%	120	400
2018	40%	100	40%	100	20%	50	250

Profit from the Electronics department in 2016 = 100 - 30 = 70

Total profit in 2016 = 100

Required % = $\frac{70}{100} \times 100$ = 70%

Correct Answer: 70

Explanation: The following tables can be formed from the charts given in the question:

	Revenue				Cost			
	Clothing	Produce	Electronics		Clothing	Produce	Electronics	
2016	20	30	50		30	40	30	
2017	30	40	30		30	30	40	
2018	40	40	20		20	50	30	

Let us consider the total cost in the year 2016 as 100. Then, according to statement 1, the total revenue in 2016 must be 200.

The store's revenue doubled from 2016 to 2017. Thus, the total revenue in the year 2017 is 400.

There was no profit from the Electronics department in 2017. So, we can find the total cost in 2017 as to be 300.

Now considering statement 4, we can find the total revenue in 2018 and tabulate the following tables:

	Cost						
	Clothing		Produce		Electronics		Total
2016	30%	30	40%	40	30%	30	100
2017	30%	90	30%	90	40%	120	300
2018	20%	40	50%	100	30%	60	200

Revenue							
	Clothing		Produce		Electronics		
2016	20%	40	30%	60	50%	100	200
2017	30%	120	40%	160	30%	120	400
2018	40%	100	40%	100	20%	50	250

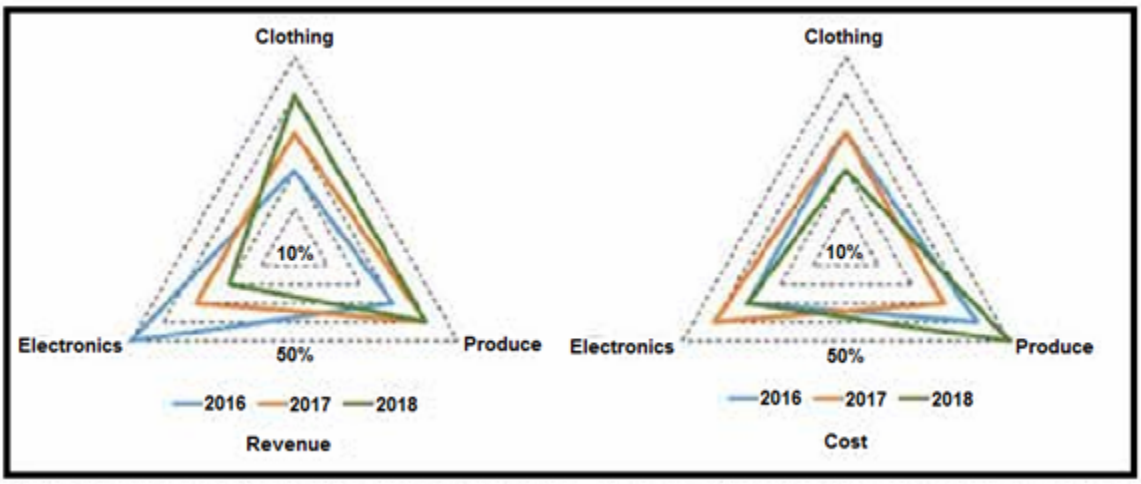
Profit from the Electronics department in 2016 = 100 - 30 = 70

Total profit in 2016 = 100

Required % = $\frac{70}{100} \times 100$ = 70%

Directions: Study the following information carefully and answer the given question.

A large store has only three departments, Clothing, Produce and Electronics. The following figures show the percentages of revenue and cost from the three departments for the years 2016, 2017 and 2018. The dotted lines depict percentage levels. So, for example, in 2016, 50% of store's revenue came from its Electronics department while 40% of its costs were incurred in the Produce department.



In this setup, profit is computed as (revenue – cost) and percentage profit as profit/cost × 100%.
It is known that

1. The percentage profit for the store in 2016 was 100%.
2. The store's revenue doubled from 2016 to 2017, and its cost doubled from 2016 to 2018.
3. There was no profit from the Electronics department in 2017.
4. In 2018, the revenue from the Clothing department was the same as the cost incurred in the Produce department.

Question: What was the approximate difference in profit percentages of the store in 2017 and 2018?

option 1. 25.0

option2. 33.3

option 3. 8.3

option4. 15.5

Correct Answer: 3

Explanation: The following tables can be formed from the charts given in the question:

	Revenue				Cost			
	Clothing	Produce	Electronics		Clothing	Produce	Electronics	
2016	20	30	50		30	40	30	
2017	30	40	30		30	30	40	
2018	40	40	20		20	50	30	

Let us consider the total cost in the year 2016 as 100. Then, according to statement 1, the total revenue in 2016 must be 200.

The store's revenue doubled from 2016 to 2017. Thus, the total revenue in the year 2017 is 400.

There was no profit from the Electronics department in 2017. So, we can find the total cost in 2017 as to be 300.

Now considering statement 4, we can find the total revenue in 2018 and tabulate the following tables:

	Cost						
	Clothing		Produce		Electronics		Total
2016	30%	30	40%	40	30%	30	100
2017	30%	90	30%	90	40%	120	300
2018	20%	40	50%	100	30%	60	200

	Revenue						
	Clothing		Produce		Electronics		
2016	20%	40	30%	60	50%	100	200
2017	30%	120	40%	160	30%	120	400
2018	40%	100	40%	100	20%	50	250

Profit percentage in 2017 = $\frac{400 - 300}{300} \times 100$ = 33.33%

Profit percentage in 2018 = $\frac{250 - 200}{200} \times 100$ = 25%

Approximate difference in profit percentages of the store in 2017 and 2018 = (33.33 - 25) = 8.33%

Directions: Study the following information carefully and answer the given question.

The first-year students in a business school are split into six sections. In 2019, the Business Statistics course was taught in these six sections by Annie, Beti, Chetan, Dave, Esha and Fakir. All six sections had a common midterm (MT) and a common endterm (ET) worth 100 marks each. ET contained more questions than MT. Questions for MT and ET were prepared collectively by the six faculty members. Considering MT and ET together, each faculty member prepared the same number of questions.

Each of MT and ET had at least four questions that were worth 5 marks, at least three questions that were worth 10 marks and at least two questions that were worth 15 marks. In both MT and ET, all the 5-mark questions preceded the 10-mark questions and all the 15-mark questions followed the 10-mark questions.

The following additional facts are known:
i. Annie prepared the fifth question for both MT and ET. For MT, this question carried 5 marks.
ii. Annie prepared one question for MT. Every other faculty member prepared more than one question for MT.
iii. All questions prepared by a faculty member appeared consecutively in MT as well as ET.
iv. Chetan prepared the third question in both MT and ET; and Esha prepared the eighth question in both.
v. Fakir prepared the first question at MT and the last one in ET. Dave prepared the last question of MT and the first one in ET.

Question: The second question in ET was prepared by:

option1. Esha

option2. Beti

option3. Chetan

option4. Dave

Correct Answer: 4

Explanation: All six sections had a common midterm (MT) and a common end term (ET) worth 100 marks each.

Each of MT and ET had at least four questions that were worth 5 marks, at least three questions that were worth 10 marks and at least two questions that were worth 15 marks.

$5 \times 4 = 20$, $10 \times 3 = 30$, $15 \times 2 = 30$

Total possible marks considering the lowest number of questions of each type = 20 + 30 + 30 = 80 marks

Rest 20 marks are possible by the following cases: {5, 5, 5, 5}, {5, 5, 10}, {10, 10}, {5, 15}

ET contained more questions than MT.

Thus, number of questions in each case:

(1) {5, 5, 5, 5} = 9 + 4 = 13 questions

(2) {5, 5, 10} = 9 + 3 = 12 questions

(3) {10, 10} = 9 + 2 = 11 questions

(4) {5, 15} = 9 + 2 = 11 questions

Considering MT and ET together, each faculty member prepared the same number of questions. The total number of question should be a multiple of 6. Thus, the total number of questions will be 24.

For ET and MT, there are two cases:

{5, 5, 5, 5} {5, 15}

{5, 5, 5, 5} {10, 10}

According to statement (i), Annie prepared the fifth question for both MT and ET. For MT, this question carried 5 marks. Thus, case {10, 10} is not possible.

MT {5, 5, 5, 5, 10, 10, 10, 15, 15, 15}

ET {5, 5, 5, 5, 5, 5, 5, 5, 10, 10, 10, 15}

From statements (i), (ii), (iv), (v), every other faculty member prepared two questions for MT.

We can create the following table:

	1	2	3	4	5	6	7	8	9	10	11
MT	5	5	5	5	5	10	10	10	15	15	15
	F	F	C	C	A	B	B	E	E	D	D

	1	2	3	4	5	6	7	8	9	10	11	12	13
ET	5	5	5	5	5	5	5	5	10	10	10	15	15
	D		C		A			E					F

{Annie (A), Beti (B), Chetan (C), Dave (D), Fakir (F)}

There were 24 questions in total, so each faculty would make 4 questions.

We can create the following table for ET:

	1	2	3	4	5	6	7	8	9	10	11	12	13
ET	5	5	5	5	5	5	5	5	10	10	10	15	15
	D	D	C	C	A	A	A	E	E	B	B	F	F

Directions: Study the following information carefully and answer the given question.

The first-year students in a business school are split into six sections. In 2019, the Business Statistics course was taught in these six sections by Annie, Beti, Chetan, Dave, Esha and Fakir. All six sections had a common midterm (MT) and a common endterm (ET) worth 100 marks each. ET contained more questions than MT. Questions for MT and ET were prepared collectively by the six faculty members. Considering MT and ET together, each faculty member prepared the same number of questions.

Each of MT and ET had at least four questions that were worth 5 marks, at least three questions that were worth 10 marks and at least two questions that were worth 15 marks. In both MT and ET, all the 5-mark questions preceded the 10-mark questions and all the 15-mark questions followed the 10-mark questions.

The following additional facts are known:
i. Annie prepared the fifth question for both MT and ET. For MT, this question carried 5 marks.
ii. Annie prepared one question for MT. Every other faculty member prepared more than one question for MT.
iii. All questions prepared by a faculty member appeared consecutively in MT as well as ET.
iv. Chetan prepared the third question in both MT and ET; and Esha prepared the eighth question in both.
v. Fakir prepared the first question at MT and the last one in ET. Dave prepared the last question of MT and the first one in ET.

Question: How many 5-mark questions were there in MT and ET combined?

option 1. 12

option 2. Cannot be determined

option 3. 13

option 4. 10

Correct Answer: 3

Explanation: All six sections had a common midterm (MT) and a common end term (ET) worth 100 marks each.

Each of MT and ET had at least four questions that were worth 5 marks, at least three questions that were worth 10 marks and at least two questions that were worth 15 marks.

$5 \times 4 = 20$, $10 \times 3 = 30$, $15 \times 2 = 30$

Total possible marks considering the lowest number of questions of each type = 20 + 30 + 30 = 80 marks

Rest 20 marks are possible by the following cases: {5, 5, 5, 5}, {5, 5, 10}, {10, 10}, {5, 15}

ET contained more questions than MT.

Thus, number of questions in each case:

(1) {5, 5, 5, 5} = 9 + 4 = 13 questions

(2) {5, 5, 10} = 9 + 3 = 12 questions

(3) {10, 10} = 9 + 2 = 11 questions

(4) {5, 15} = 9 + 2 = 11 questions

Considering MT and ET together, each faculty member prepared the same number of questions. The total number of question should be a multiple of 6. Thus, the total number of questions will be 24.

For ET and MT, there are two cases:

{5, 5, 5, 5} {5, 15}

{5, 5, 5, 5} {10, 10}

According to statement (i), Annie prepared the fifth question for both MT and ET. For MT, this question carried 5 marks. Thus, case {10, 10} is not possible.

MT {5, 5, 5, 5, 10, 10, 10, 15, 15, 15}

ET {5, 5, 5, 5, 5, 5, 5, 5, 10, 10, 10, 15}

From statements (i), (ii), (iv), (v), every other faculty member prepared two questions for MT.

We can create the following table:

	1	2	3	4	5	6	7	8	9	10	11
MT	5	5	5	5	5	10	10	10	15	15	15
	F	F	C	C	A	B	B	E	E	D	D

	1	2	3	4	5	6	7	8	9	10	11	12	13
ET	5	5	5	5	5	5	5	5	10	10	10	15	15
	D		C		A			E					F

{Annie (A), Beti (B), Chetan (C), Dave (D), Fakir (F)}

There were 24 questions in total, so each faculty would make 4 questions.

We can create the following table for ET:

	1	2	3	4	5	6	7	8	9	10	11	12	13
ET	5	5	5	5	5	5	5	5	10	10	10	15	15
	D	D	C	C	A	A	A	E	E	B	B	F	F

Number of 5-mark questions in MT = 5

Number of 5-mark questions in ET = 8

Required number = 13

Hence, the correct option is (3).

Directions: Study the following information carefully and answer the given question.

The first-year students in a business school are split into six sections. In 2019, the Business Statistics course was taught in these six sections by Annie, Beti, Chetan, Dave, Esha and Fakir. All six sections had a common midterm (MT) and a common endterm (ET) worth 100 marks each. ET contained more questions than MT. Questions for MT and ET were prepared collectively by the six faculty members. Considering MT and ET together, each faculty member prepared the same number of questions.

Each of MT and ET had at least four questions that were worth 5 marks, at least three questions that were worth 10 marks and at least two questions that were worth 15 marks. In both MT and ET, all the 5-mark questions preceded the 10-mark questions and all the 15-mark questions followed the 10-mark questions.

The following additional facts are known:
i. Annie prepared the fifth question for both MT and ET. For MT, this question carried 5 marks.
ii. Annie prepared one question for MT. Every other faculty member prepared more than one question for MT.
iii. All questions prepared by a faculty member appeared consecutively in MT as well as ET.
iv. Chetan prepared the third question in both MT and ET; and Esha prepared the eighth question in both.
v. Fakir prepared the first question at MT and the last one in ET. Dave prepared the last question of MT and the first one in ET.

Question: Who prepared 15-mark questions for MT and ET?

option 1. Only Dave, Esha and Fakir

option 2. Only Esha anti Fakir

option 3. Only Dave and Fakir

option 4. Only Beti, Dave, Esha and Fakir

Correct Answer: 1

Explanation: All six sections had a common midterm (MT) and a common end term (ET) worth 100 marks each.

Each of MT and ET had at least four questions that were worth 5 marks, at least three questions that were worth 10 marks and at least two questions that were worth 15 marks.

$5 \times 4 = 20$, $10 \times 3 = 30$, $15 \times 2 = 30$

Total possible marks considering the lowest number of questions of each type = 20 + 30 + 30 = 80 marks

Rest 20 marks are possible by the following cases: {5, 5, 5, 5}, {5, 5, 10}, {10, 10}, {5, 15}

ET contained more questions than MT.

Thus, number of questions in each case:

(1) {5, 5, 5, 5} = 9 + 4 = 13 questions

(2) {5, 5, 10} = 9 + 3 = 12 questions

(3) {10, 10} = 9 + 2 = 11 questions

(4) {5, 15} = 9 + 2 = 11 questions

Considering MT and ET together, each faculty member prepared the same number of questions. The total number of question should be a multiple of 6. Thus, the total number of questions will be 24.

For ET and MT, there are two cases:

{5, 5, 5, 5} {5, 15}

{5, 5, 5, 5} {10, 10}

According to statement (i), Annie prepared the fifth question for both MT and ET. For MT, this question carried 5 marks. Thus, case {10, 10} is not possible.

MT {5, 5, 5, 5, 10, 10, 10, 15, 15, 15}

ET {5, 5, 5, 5, 5, 5, 5, 5, 10, 10, 10, 15}

From statements (i), (ii), (iv), (v), every other faculty member prepared two questions for MT.

We can create the following table:

	1	2	3	4	5	6	7	8	9	10	11
MT	5	5	5	5	5	10	10	10	15	15	15
	F	F	C	C	A	B	B	E	E	D	D

	1	2	3	4	5	6	7	8	9	10	11	12	13
ET	5	5	5	5	5	5	5	5	10	10	10	15	15
	D		C		A			E					F

{Annie (A), Beti (B), Chetan (C), Dave (D), Fakir (F)}

There were 24 questions in total, so each faculty would make 4 questions.

We can create the following table for ET:

	1	2	3	4	5	6	7	8	9	10	11	12	13
ET	5	5	5	5	5	5	5	5	10	10	10	15	15
	D	D	C	C	A	A	A	E	E	B	B	F	F

Only Dave, Esha and Fakir prepared 15-mark questions for MT and ET.

Hence, the correct option is (1).

Directions: Study the following information carefully and answer the given question.

The first-year students in a business school are split into six sections. In 2019, the Business Statistics course was taught in these six sections by Annie, Beti, Chetan, Dave, Esha and Fakir. All six sections had a common midterm (MT) and a common endterm (ET) worth 100 marks each. ET contained more questions than MT. Questions for MT and ET were prepared collectively by the six faculty members. Considering MT and ET together, each faculty member prepared the same number of questions.

Each of MT and ET had at least four questions that were worth 5 marks, at least three questions that were worth 10 marks and at least two questions that were worth 15 marks. In both MT and ET, all the 5-mark questions preceded the 10-mark questions and all the 15-mark questions followed the 10-mark questions.

The following additional facts are known:
i. Annie prepared the fifth question for both MT and ET. For MT, this question carried 5 marks.
ii. Annie prepared one question for MT. Every other faculty member prepared more than one question for MT.
iii. All questions prepared by a faculty member appeared consecutively in MT as well as ET.
iv. Chetan prepared the third question in both MT and ET; and Esha prepared the eighth question in both.
v. Fakir prepared the first question at MT and the last one in ET. Dave prepared the last question of MT and the first one in ET.

Question: Which of the following questions did Beti prepare in ET?

option 1. Fourth question

option 2. Seventh question

option3. Ninth question

option 4. Tenth question

Correct Answer: 4

Explanation: All six sections had a common midterm (MT) and a common end term (ET) worth 100 marks each.

Each of MT and ET had at least four questions that were worth 5 marks, at least three questions that were worth 10 marks and at least two questions that were worth 15 marks.

$5 \times 4 = 20$, $10 \times 3 = 30$, $15 \times 2 = 30$

Total possible marks considering the lowest number of questions of each type = 20 + 30 + 30 = 80 marks

Rest 20 marks are possible by the following cases: {5, 5, 5, 5}, {5, 5, 10}, {10, 10}, {5, 15}

ET contained more questions than MT.

Thus, number of questions in each case:

(1) {5, 5, 5, 5} = 9 + 4 = 13 questions

(2) {5, 5, 10} = 9 + 3 = 12 questions

(3) {10, 10} = 9 + 2 = 11 questions

(4) {5, 15} = 9 + 2 = 11 questions

Considering MT and ET together, each faculty member prepared the same number of questions. The total number of question should be a multiple of 6. Thus, the total number of questions will be 24.

For ET and MT, there are two cases:

{5, 5, 5, 5} {5, 15}

{5, 5, 5, 5} {10, 10}

According to statement (i), Annie prepared the fifth question for both MT and ET. For MT, this question carried 5 marks. Thus, case {10, 10} is not possible.

MT {5, 5, 5, 5, 10, 10, 10, 15, 15, 15}

ET {5, 5, 5, 5, 5, 5, 5, 5, 10, 10, 10, 15}

From statements (i), (ii), (iv), (v), every other faculty member prepared two questions for MT.

We can create the following table:

	1	2	3	4	5	6	7	8	9	10	11
MT	5	5	5	5	5	10	10	10	15	15	15
	F	F	C	C	A	B	B	E	E	D	D

	1	2	3	4	5	6	7	8	9	10	11	12	13
ET	5	5	5	5	5	5	5	5	10	10	10	15	15
	D		C		A			E					F

{Annie (A), Beti (B), Chetan (C), Dave (D), Fakir (F)}

There were 24 questions in total, so each faculty would make 4 questions.

We can create the following table for ET:

	1	2	3	4	5	6	7	8	9	10	11	12	13
ET	5	5	5	5	5	5	5	5	10	10	10	15	15
	D	D	C	C	A	A	A	E	E	B	B	F	F

Beti prepared the tenth and eleventh questions in ET.

Hence, the correct option is (4).

Directions: Study the following information carefully and answer the given question.

Students in a college are discussing two proposals-

A: a proposal by the authorities to introduce dress code on campus, and

B: a proposal by the students to allow multinational food franchises to set up outlets on college campus.

A student does not necessarily support either of the two proposals.

In an upcoming election for student union president, there are two candidates in fray: Sunita arid Ragini. Every student prefers one of the two candidates.

A survey was conducted among the students by picking a sample of 500 students. The following information was noted from this survey.

1. 250 students supported proposal A and 250 students supported proposal B.

2. Among the 200 students who preferred Sunita as student union president, 80% supported proposal A.

3. Among those who preferred Ragini, 30% supported proposal A.

4. 20% of those who supported proposal B preferred Sunita.

5. 40% of those who did not support proposal B preferred Ragini.

6. Every student who preferred Sunita and supported proposal B also supported proposal A.

7. Among those who preferred Ragini, 20% did not support any of the proposals.

Question: Among the students surveyed who supported proposal A, what percentage preferred Sunita for student union president?

Answer : 64Total number of students surveyed = 500

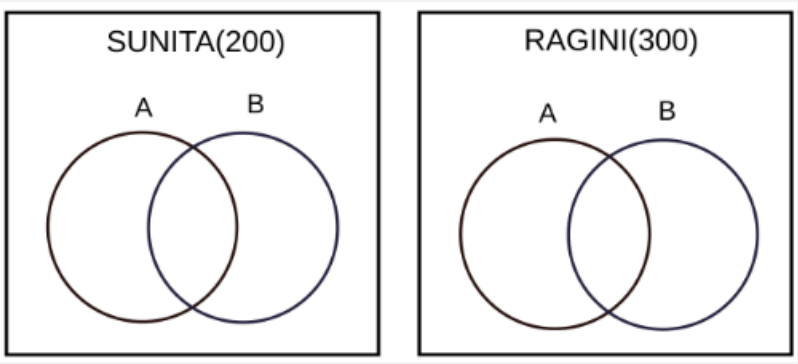
Every student preferred one of the two candidates: Ragini (R) and Sunita (S).

Thus, R + S = 500

According to statement 2, "Among the 200 students who preferred Sunita as student union president, 80% supported proposal A."

Number of students who preferred Sunita (S) = 200

Number of students who preferred Ragini (R) = 300

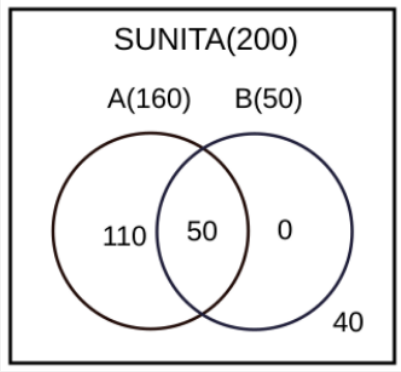


According to statements 2 and 3, 160 students who preferred Sunita also supported proposal A and 90 students who preferred Ragini also supported proposal A.

From statement 4, number of students who preferred Sunita and supported proposal B = 20% of 250 = 50

From statement 6, number of students who preferred Sunita and supported proposal A and B both = 50

We can make the following Venn diagram for Sunita.



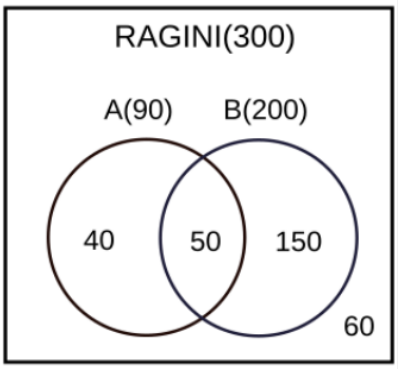
From statement 7, number of students who preferred Ragini and didn't support any proposal = 20% of 300 = 60

From statement 5, number of students who did not support proposal B and preferred Ragini = 40% of 250 = 100

That means, number of students who supported B and also preferred Ragini = 300 - 100 = 200

And number of students who supported both A and B and also preferred Ragini = 90 + 60 - 100 = 50

We can make the following Venn diagram for Ragini.



Number of students who preferred Sunita and supported proposal A = 160

Required percentage = $\frac{160}{250} \times 100\% = 64\%$

Correct Answer: 64

Explanation: Total number of students surveyed = 500

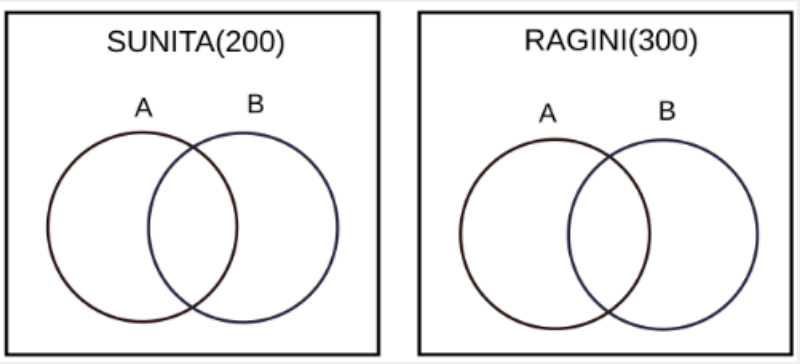
Every student preferred one of the two candidates: Ragini (R) and Sunita (S).

Thus, R + S = 500

According to statement 2, "Among the 200 students who preferred Sunita as student union president, 80% supported proposal A."

Number of students who preferred Sunita (S) = 200

Number of students who preferred Ragini (R) = 300

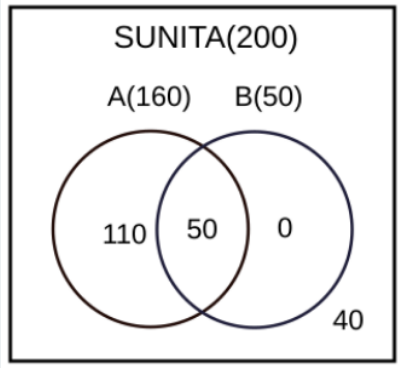


According to statements 2 and 3, 160 students who preferred Sunita also supported proposal A and 90 students who preferred Ragini also supported proposal A.

From statement 4, number of students who preferred Sunita and supported proposal B = 20% of 250 = 50

From statement 6, number of students who preferred Sunita and supported proposal A and B both = 50

We can make the following Venn diagram for Sunita.



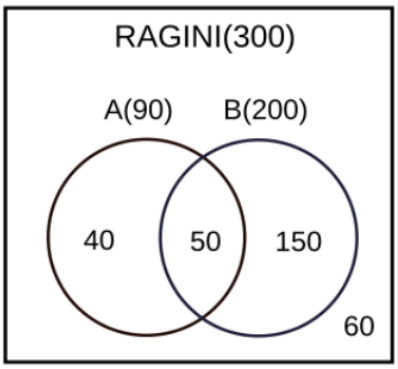
From statement 7, number of students who preferred Ragini and didn't support any proposal = 20% of 300 = 60

From statement 5, number of students who did not support proposal B and preferred Ragini = 40% of 250 = 100

That means, number of students who supported B and also preferred Ragini = 300 - 100 = 200

And number of students who supported both A and B and also preferred Ragini = 90 + 60 - 100 = 50

We can make the following Venn diagram for Ragini.



Number of students who preferred Sunita and supported proposal A = 160

Required percentage = $\frac{160}{250} \times 100\% = 64\%$

Directions: Study the following information carefully and answer the given question.

Students in a college are discussing two proposals-

A: a proposal by the authorities to introduce dress code on campus, and

B: a proposal by the students to allow multinational food franchises to set up outlets on college campus.

A student does not necessarily support either of the two proposals.

In an upcoming election for student union president, there are two candidates in fray: Sunita arid Ragini. Every student prefers one of the two candidates.

A survey was conducted among the students by picking a sample of 500 students. The following information was noted from this survey.

1. 250 students supported proposal A and 250 students supported proposal B.

2. Among the 200 students who preferred Sunita as student union president, 80% supported proposal A.

3. Among those who preferred Ragini, 30% supported proposal A.

4. 20% of those who supported proposal B preferred Sunita.

5. 40% of those who did not support proposal B preferred Ragini.

6. Every student who preferred Sunita and supported proposal B also supported proposal A.

7. Among those who preferred Ragini, 20% did not support any of the proposals.

Question: What percentage of the students surveyed who did not support proposal A preferred Ragini as student union president?

Answer : 84Total number of students surveyed = 500

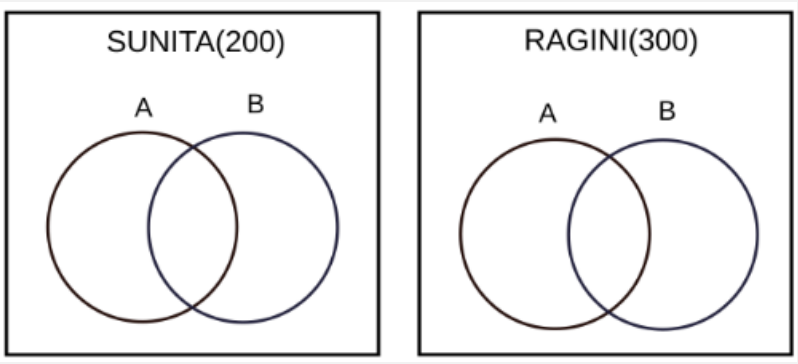
Every student preferred one of the two candidates: Ragini (R) and Sunita (S).

Thus, R + S = 500

According to statement 2, "Among the 200 students who preferred Sunita as student union president, 80% supported proposal A."

Number of students who preferred Sunita (S) = 200

Number of students who preferred Ragini (R) = 300

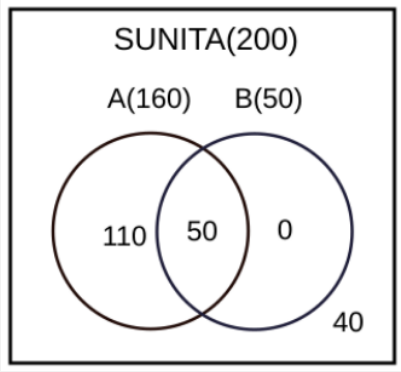


According to statements 2 and 3, 160 students who preferred Sunita also supported proposal A and 90 students who preferred Ragini also supported proposal A.

From statement 4, number of students who preferred Sunita and supported proposal B = 20% of 250 = 50

From statement 6, number of students who preferred Sunita and supported proposal A and B both = 50

We can make the following Venn diagram for Sunita.



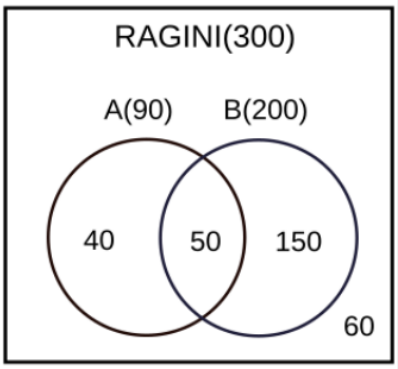
From statement 7, number of students who preferred Ragini and didn't support any proposal = 20% of 300 = 60

From statement 5, number of students who did not support proposal B and preferred Ragini = 40% of 250 = 100

That means, number of students who supported B and also preferred Ragini = 300 - 100 = 200

And number of students who supported both A and B and also preferred Ragini = 90 + 60 - 100 = 50

We can make the following Venn diagram for Ragini.



Percentage of the students surveyed who did not support proposal A and preferred Ragini as student union president = $\frac{300-90}{250} \times 100 = 84\%$

Correct Answer: 84

Explanation: Total number of students surveyed = 500

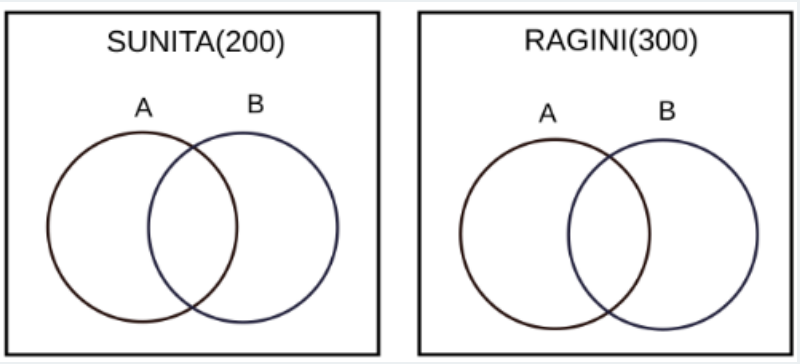
Every student preferred one of the two candidates: Ragini (R) and Sunita (S).

Thus, R + S = 500

According to statement 2, "Among the 200 students who preferred Sunita as student union president, 80% supported proposal A."

Number of students who preferred Sunita (S) = 200

Number of students who preferred Ragini (R) = 300

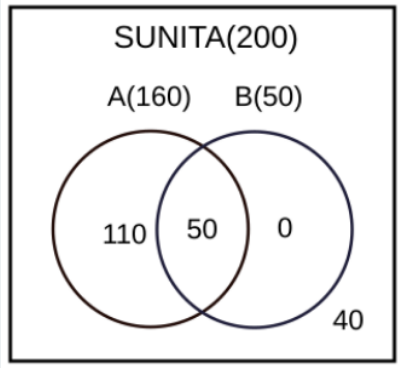


According to statements 2 and 3, 160 students who preferred Sunita also supported proposal A and 90 students who preferred Ragini also supported proposal A.

From statement 4, number of students who preferred Sunita and supported proposal B = 20% of 250 = 50

From statement 6, number of students who preferred Sunita and supported proposal A and B both = 50

We can make the following Venn diagram for Sunita.



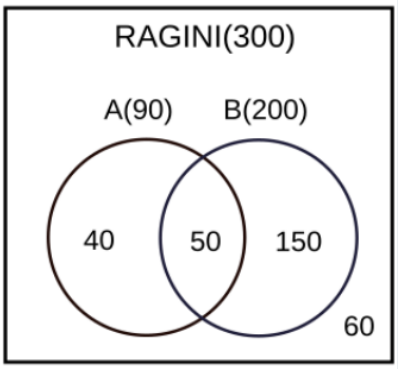
From statement 7, number of students who preferred Ragini and didn't support any proposal = 20% of 300 = 60

From statement 5, number of students who did not support proposal B and preferred Ragini = 40% of 250 = 100

That means, number of students who supported B and also preferred Ragini = 300 - 100 = 200

And number of students who supported both A and B and also preferred Ragini = 90 + 60 - 100 = 50

We can make the following Venn diagram for Ragini.



Percentage of the students surveyed who did not support proposal A and preferred Ragini as student union president = $\frac{300-90}{250} \times 100 = 84\%$

Directions: Study the following information carefully and answer the given question.

Students in a college are discussing two proposals-

A: a proposal by the authorities to introduce dress code on campus, and

B: a proposal by the students to allow multinational food franchises to set up outlets on college campus.

A student does not necessarily support either of the two proposals.

In an upcoming election for student union president, there are two candidates in fray: Sunita arid Ragini. Every student prefers one of the two candidates.

A survey was conducted among the students by picking a sample of 500 students. The following information was noted from this survey.

1. 250 students supported proposal A and 250 students supported proposal B.

2. Among the 200 students who preferred Sunita as student union president, 80% supported proposal A.

3. Among those who preferred Ragini, 30% supported proposal A.

4. 20% of those who supported proposal B preferred Sunita.

5. 40% of those who did not support proposal B preferred Ragini.

6. Every student who preferred Sunita and supported proposal B also supported proposal A.

7. Among those who preferred Ragini, 20% did not support any of the proposals.

Question: What percentage of the students surveyed who supported both proposals A and B preferred Sunita as student union president?

option 1. 50

option 2. 25

option3. 20

option 4. 40

Correct Answer: 1

Explanation: Total number of students surveyed = 500

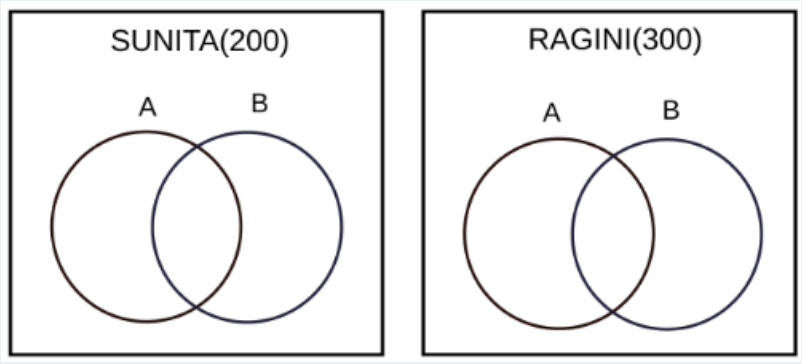
Every student preferred one of the two candidates: Ragini (R) and Sunita (S).

Thus, R + S = 500

According to statement 2, "Among the 200 students who preferred Sunita as student union president, 80% supported proposal A."

Number of students who preferred Sunita (S) = 200

Number of students who preferred Ragini (R) = 300

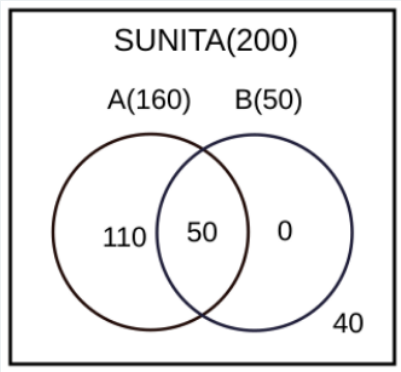


According to statements 2 and 3, 160 students who preferred Sunita also supported proposal A and 90 students who preferred Ragini also supported proposal A.

From statement 4, number of students who preferred Sunita and supported proposal B = 20% of 250 = 50

From statement 6, number of students who preferred Sunita and supported proposal A and B both = 50

We can make the following Venn diagram for Sunita.



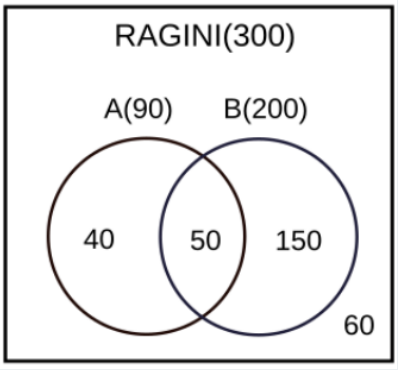
From statement 7, number of students who preferred Ragini and didn't support any proposal = 20% of 300 = 60

From statement 5, number of students who did not support proposal B and preferred Ragini = 40% of 250 = 100

That means, number of students who supported B and also preferred Ragini = 300 - 100 = 200

And number of students who supported both A and B and also preferred Ragini = 90 + 60 - 100 = 50

We can make the following Venn diagram for Ragini.



According to the Venn diagram, percentage of the students surveyed who supported both proposals A and B and preferred Sunita as student union president = $\frac{50}{50+50} \times 100 = 50\%$

Directions: Study the following information carefully and answer the given question.

Students in a college are discussing two proposals-

A: a proposal by the authorities to introduce dress code on campus, and

B: a proposal by the students to allow multinational food franchises to set up outlets on college campus.

A student does not necessarily support either of the two proposals.

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1. 250 students supported proposal A and 250 students supported proposal B.

2. Among the 200 students who preferred Sunita as student union president, 80% supported proposal A.

3. Among those who preferred Ragini, 30% supported proposal A.

4. 20% of those who supported proposal B preferred Sunita.

5. 40% of those who did not support proposal B preferred Ragini.

6. Every student who preferred Sunita and supported proposal B also supported proposal A.

7. Among those who preferred Ragini, 20% did not support any of the proposals.

Question: How many of the students surveyed supported proposal B, did not support proposal A and preferred Ragini as student union president?

option 1. 200

option 2. 40

option 3. 150

option 4. 210

Correct Answer: 3

Explanation: Total number of students surveyed = 500

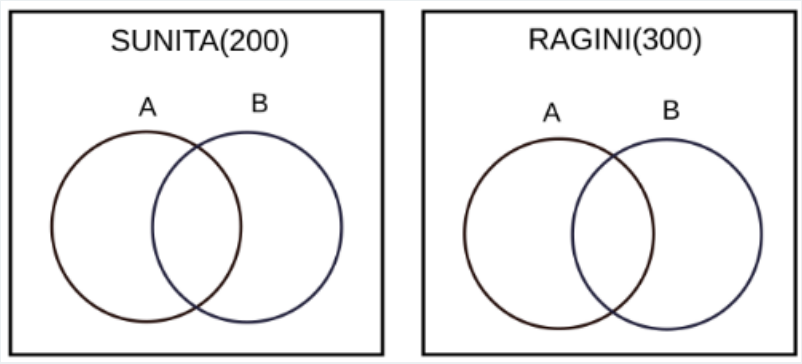
Every student preferred one of the two candidates: Ragini (R) and Sunita (S).

Thus, R + S = 500

According to statement 2, "Among the 200 students who preferred Sunita as student union president, 80% supported proposal A."

Number of students who preferred Sunita (S) = 200

Number of students who preferred Ragini (R) = 300

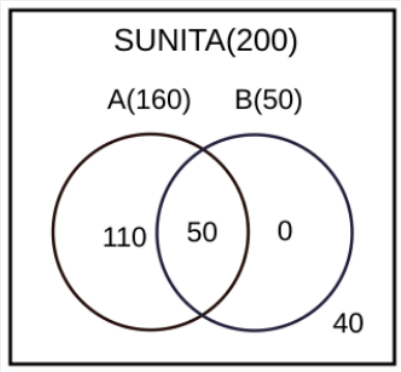


According to statements 2 and 3, 160 students who preferred Sunita also supported proposal A and 90 students who preferred Ragini also supported proposal A.

From statement 4, number of students who preferred Sunita and supported proposal B = 20% of 250 = 50

From statement 6, number of students who preferred Sunita and supported proposal A and B both = 50

We can make the following Venn diagram for Sunita.



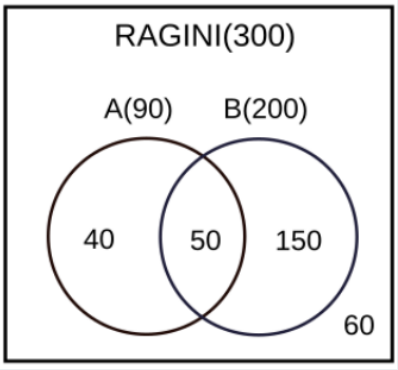
From statement 7, number of students who preferred Ragini and didn't support any proposal = 20% of 300 = 60

From statement 5, number of students who did not support proposal B and preferred Ragini = 40% of 250 = 100

That means, number of students who supported B and also preferred Ragini = 300 - 100 = 200

And number of students who supported both A and B and also preferred Ragini = 90 + 60 - 100 = 50

We can make the following Venn diagram for Ragini.



Number of the students surveyed who supported proposal B, did not support proposal A and preferred Ragini as student union president = 200 - 50 = 150

Therefore, option 3 is the correct answer.

Directions: Study the following information carefully and answer the given question.

Three doctors Dr. Ben, Dr. Kane and Dr. Wayne visit a particular clinic Monday to Saturday to see patients. Dr. Ben sees each patient for 10 minutes and charges Rs. 100/-. Dr. Kane sees each patient for 15 minutes and charges Rs. 200/-, while Dr. Wayne sees each patient for 25 minutes and charges Rs. 300/-.

The clinic has three rooms numbered 1, 2 and 3 which are assigned to the three doctors as per the following table:

Room No.	Monday and Tuesday	Wednesday and Thursday	Friday and Saturday
1	Ben	Wayne	Kane
2	Kane	Ben	Wayne
3	Wayne	Kane	Ben

The clinic is open from 9 a.m. to 11:30 a.m. every Monday to Saturday.

On arrival, each patient is handed a numbered token indicating their position in the queue, starting with token number 1 every day. As soon as any doctor becomes free, the next patient in the queue enters that emptied room for consultation. If at any time, more than one room is free, then the waiting patient enters the room with the smallest number. For example, if the next two patients in the queue have token numbers 7 and 8 and if rooms numbered 1 and 3 are free, then patient with token number 7 enters room number 1 and patient with token number 8 enters room number 3.

Question: What is the maximum number of patients that the clinic can cater to on any single day?

option 1. 30

option 2. 12

option3. 31

option 4. 15

Correct Answer: 3

Explanation: If all the doctors served the patients one after the other, then in 2.5 hours, Ben will serve 15 patients, Kane will serve 10 patients and Wayne will serve 6 patients.

A total of 31 patients can be served on a particular day.

Directions: Study the following information carefully and answer the given question.

Three doctors Dr. Ben, Dr. Kane and Dr. Wayne visit a particular clinic Monday to Saturday to see patients. Dr. Ben sees each patient for 10 minutes and charges Rs. 100/-. Dr. Kane sees each patient for 15 minutes and charges Rs. 200/-, while Dr. Wayne sees each patient for 25 minutes and charges Rs. 300/-.

The clinic has three rooms numbered 1, 2 and 3 which are assigned to the three doctors as per the following table:

Room No.	Monday and Tuesday	Wednesday and Thursday	Friday and Saturday
1	Ben	Wayne	Kane
2	Kane	Ben	Wayne
3	Wayne	Kane	Ben

The clinic is open from 9 a.m. to 11:30 a.m. every Monday to Saturday.

On arrival, each patient is handed a numbered token indicating their position in the queue, starting with token number 1 every day. As soon as any doctor becomes free, the next patient in the queue enters that emptied room for consultation. If at any time, more than one room is free, then the waiting patient enters the room with the smallest number. For example, if the next two patients in the queue have token numbers 7 and 8 and if rooms numbered 1 and 3 are free, then patient with token number 7 enters room number 1 and patient with token number 8 enters room number 3.

Question: The queue is never empty on one particular Saturday. Which of the three doctors would earn the maximum amount in consultation charges on that day?

option 1. Dr. Kane

option 2. Dr. Wayne

option 3. Dr. Ben

option 4. Both Dr. Wayne and Dr. Kane

Correct Answer: 1

Explanation: If all the doctors served the patients one after the other, then in 2.5 hours, Ben will serve 15 patients, Kane will serve 10 patients and Wayne will serve 6 patients.

Ben will earn: 15 × 100 = Rs. 1500

Kane will earn: 10 × 200 = Rs. 2000

Wayne will earn: 6 × 300 = Rs. 1800

So, Kane will earn the maximum amount in consultation charges on that day.

Directions: Study the following information carefully and answer the given question.

Three doctors Dr. Ben, Dr. Kane and Dr. Wayne visit a particular clinic Monday to Saturday to see patients. Dr. Ben sees each patient for 10 minutes and charges Rs. 100/-. Dr. Kane sees each patient for 15 minutes and charges Rs. 200/-, while Dr. Wayne sees each patient for 25 minutes and charges Rs. 300/-.

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The clinic is open from 9 a.m. to 11:30 a.m. every Monday to Saturday.

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Question: Mr. Singh visited the clinic on Monday, Wednesday and Friday of a particular week, arriving at 8:50 a.m. on each of the three days. His token number was 13 on all three days. On which day was he at the clinic for the maximum duration?

option 1. Same duration on all three days

option 2. Wednesday

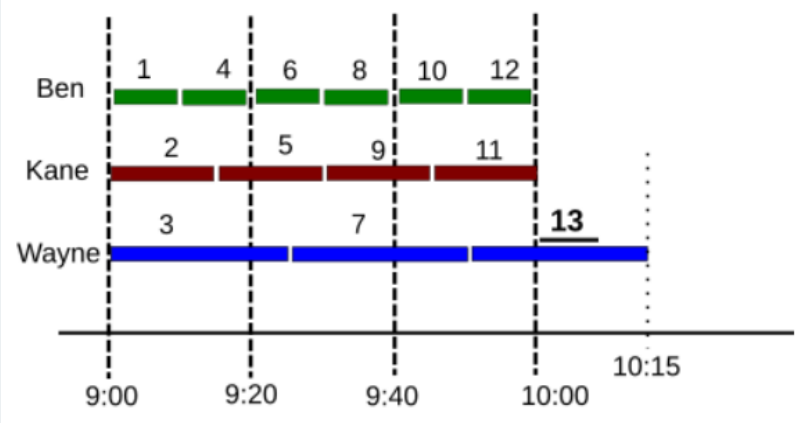
option 3. Monday

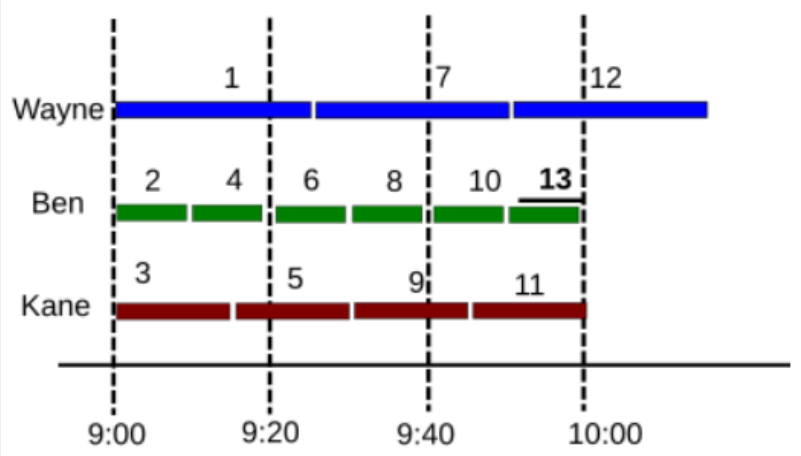
option 4. Friday

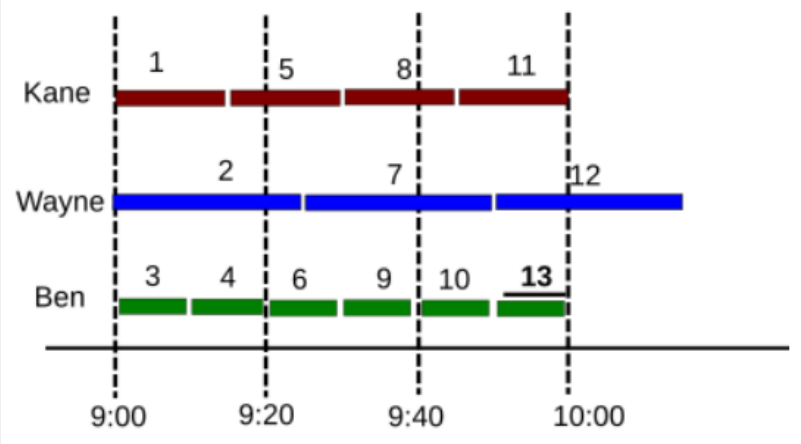
Correct Answer: 3

Explanation: Mr. Singh was 13th in the sequence on all the three days.

The following table will show the sequence for Monday, Wednesday and Friday.







He would stay the longest when the 13th guy was served by Dr. Wayne.

From the table, on Monday he had to wait at the clinic for the maximum duration; till 10:15.

Hence, the correct option is (3).

Directions: Study the following information carefully and answer the given question.

Three doctors Dr. Ben, Dr. Kane and Dr. Wayne visit a particular clinic Monday to Saturday to see patients. Dr. Ben sees each patient for 10 minutes and charges Rs. 100/-. Dr. Kane sees each patient for 15 minutes and charges Rs. 200/-, while Dr. Wayne sees each patient for 25 minutes and charges Rs. 300/-.

The clinic has three rooms numbered 1, 2 and 3 which are assigned to the three doctors as per the following table:

Room No.	Monday and Tuesday	Wednesday and Thursday	Friday and Saturday
1	Ben	Wayne	Kane
2	Kane	Ben	Wayne
3	Wayne	Kane	Ben

The clinic is open from 9 a.m. to 11:30 a.m. every Monday to Saturday.

On arrival, each patient is handed a numbered token indicating their position in the queue, starting with token number 1 every day. As soon as any doctor becomes free, the next patient in the queue enters that emptied room for consultation. If at any time, more than one room is free, then the waiting patient enters the room with the smallest number. For example, if the next two patients in the queue have token numbers 7 and 8 and if rooms numbered 1 and 3 are free, then patient with token number 7 enters room number 1 and patient with token number 8 enters room number 3.

Question: On a slow Thursday, only two patients are waiting at 9 a.m. After that, two patients keep arriving at exact 15 minute intervals starting at 9:15 a.m., i.e. at 9:15 a.m., 9:30 a.m., 9:45 a.m., etc. Then the total duration in minutes when all three doctors are simultaneously free is

option 1. 10

option2. 15

option3. 0

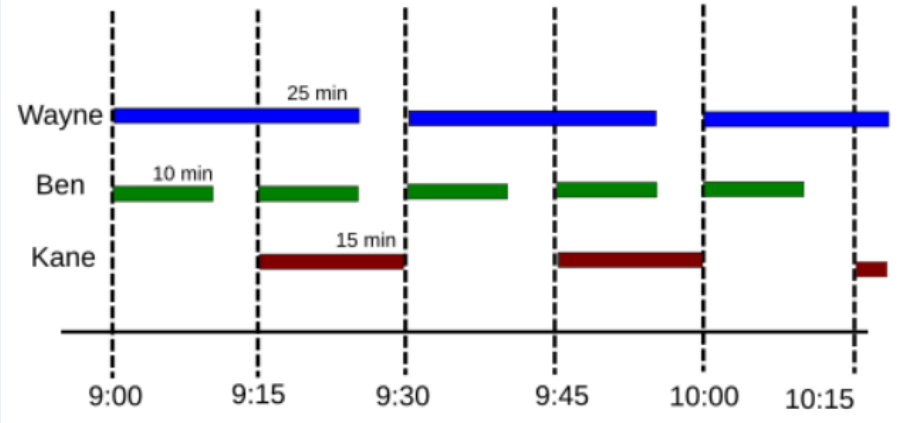
option 4. 30

Correct Answer: 3

Explanation: On Thursday, the preference order for the patients is: Wayne, Ben and Kane.

The first two customers will be served by Wayne and Ben, while Kane will be free for the first 15 minutes.

Then Kane and Ben will serve the next two customers and Wayne will be free for 5 minutes as shown in the figure below:

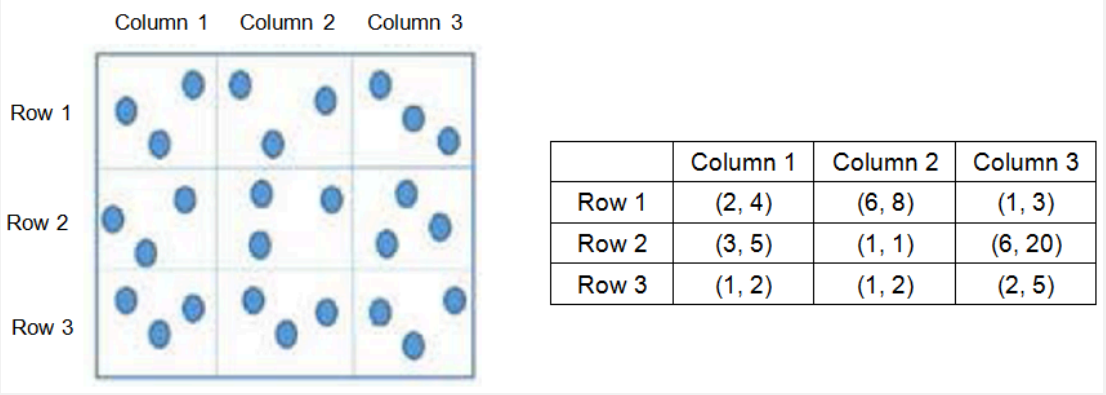


As we can see, the cycle will repeat after every 30 minutes.

So, all three doctors are never simultaneously free.

Hence, the correct option is (3).

Directions: Study the following information carefully and answer the given question.



	Column 1	Column 2	Column 3
Row 1	(2, 4)	(6, 8)	(1, 3)
Row 2	(3, 5)	(1, 1)	(6, 20)
Row 3	(1, 2)	(1, 2)	(2, 5)

Three pouches (each represented by a filled circle) are kept in each of the nine slots in a 3 × 3 grid, as shown in the figure. Every pouch has a certain number of one-rupee coins. The minimum and maximum amounts of money (in rupees) among the three pouches in each of the nine slots are given in the table. For example, we know that among the three pouches kept in the second column of the first row, the minimum amount in a pouch is Rs. 6 and the maximum amount is Rs. 8.

There are nine pouches in any of the three columns, as well as in any of the three rows. It is known that the average amount of money (in rupees) kept in the nine pouches in any column or in any row is an integer. It is also known that the total amount of money kept in the three pouches in the first column of the third row is Rs. 4.

Question: What is the total amount of money (in rupees) in the three pouches kept in the first column of the second row?

Answer : 13We can make the following table from statement "the total amount of money kept in the three pouches in the first column of the third row is Rs. 4".

	Column 1	Column 2	Column 3
Row 1			
Row 2			
Row 3	4 (1, 1, 2)		

If we calculate the maximum and minimum values possible for each slot in column 1, we get that for the slot of column 1 and row 1, the maximum value possible is 10 {2, 4, 4}, while the minimum value possible is 8 {2, 2, 4}. Similarly, for the slot of column 1 and row 2, the maximum value possible is 13 {3, 5, 5}, while the minimum value possible is 11 {3, 3, 5}.

So, we can find by iteration that 10, 13, 4, ... {27} is the only sum possible for the slots of column 1.

We can make the following table:

	Column 1	Column 2	Column 3
Row 1	10 (2, 4, 4)		
Row 2	13 (3, 5, 5)	3 (1, 1, 1)	
Row 3	4 (1, 1, 2)		

Total amount of money (in rupees) in the three pouches kept in the first column of the second row = 13

Correct Answer: 13

Explanation: We can make the following table from statement "the total amount of money kept in the three pouches in the first column of the third row is Rs. 4".

	Column 1	Column 2	Column 3
Row 1			
Row 2			
Row 3	4 (1, 1, 2)		

If we calculate the maximum and minimum values possible for each slot in column 1, we get that for the slot of column 1 and row 1, the maximum value possible is 10 {2, 4, 4}, while the minimum value possible is 8 {2, 2, 4}. Similarly, for the slot of column 1 and row 2, the maximum value possible is 13 {3, 5, 5}, while the minimum value possible is 11 {3, 3, 5}.

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We can make the following table:

	Column 1	Column 2	Column 3
Row 1	10 (2, 4, 4)		
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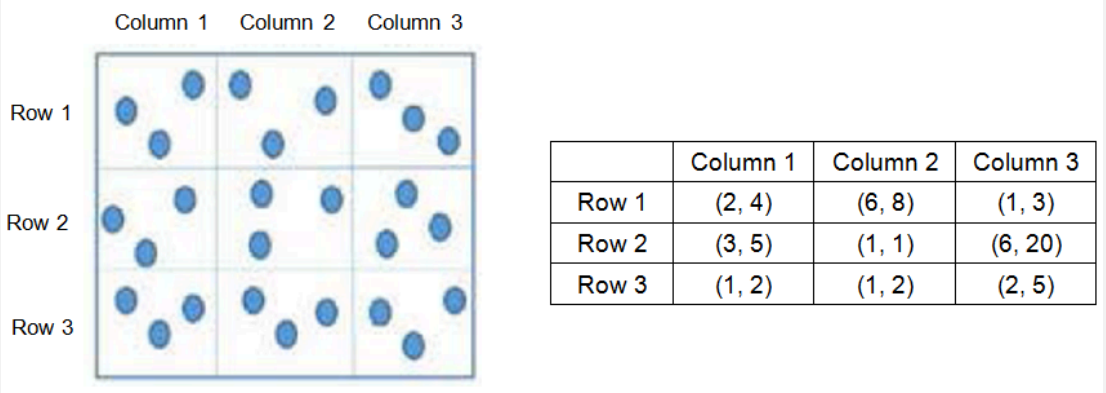
Total amount of money (in rupees) in the three pouches kept in the first column of the second row = 13

Directions: Study the following information carefully and answer the given question.



	Column 1	Column 2	Column 3
Row 1	(2, 4)	(6, 8)	(1, 3)
Row 2	(3, 5)	(1, 1)	(6, 20)
Row 3	(1, 2)	(1, 2)	(2, 5)

Three pouches (each represented by a filled circle) are kept in each of the nine slots in a 3 × 3 grid, as shown in the figure. Every pouch has a certain number of one-rupee coins. The minimum and maximum amounts of money (in rupees) among the three pouches in each of the nine slots are given in the table. For example, we know that among the three pouches kept in the second column of the first row, the minimum amount in a pouch is Rs. 6 and the maximum amount is Rs. 8.

There are nine pouches in any of the three columns, as well as in any of the three rows. It is known that the average amount of money (in rupees) kept in the nine pouches in any column or in any row is an integer. It is also known that the total amount of money kept in the three pouches in the first column of the third row is Rs. 4.

Question: How many pouches contain exactly one coin?

Answer : 8We can make the following table from statement "the total amount of money kept in the three pouches in the first column of the third row is Rs. 4".

If the minimum and maximum values are 1, then the sum of the three pouches in the middle will be Rs. 3.

	Column 1	Column 2	Column 3
Row 1			
Row 2		3 (1, 1, 1)	
Row 3	4 (1, 1, 2)		

If we calculate the maximum and minimum values possible for each slot in column 1, we get that for the slot of column 1 and row 1, the maximum value possible is 10 {2, 4, 4}, while the minimum value possible is 8 {2, 2, 4}. Similarly, for the slot of column 1 and row 2, the maximum value possible is 13 {3, 5, 5}, while the minimum value possible is 11 {3, 3, 5}.

So, we can find by iteration that 10, 13, 4, ... {27} is the only sum possible for the slots of column 1.

We now know two elements of row 2, so we can iterate from the maximum and minimum values possible for the slot {column 3, row 2} that 38 is the only value possible for the slot.We can form the following table:

	Column 1	Column 2	Column 3
Row 1	10 (2, 4, 4)		
Row 2	13 (3, 5, 5)	3 (1, 1, 1)	38 (6, 12, 20)
Row 3	4 (1, 1, 2)		

Similarly, we can find the amount for column 2.

For the slot, column 2 and row 1, the maximum value possible is 22 {6, 8, 8}, while the minimum value possible is 20 {6, 6, 8}.

For the slot, column 2 and row 3, the maximum value possible is 5 {1, 2, 3}, while the minimum value possible is 4 {1, 1, 2}.

Thus, {20, 3, 4} is the only solution possible.

	Column 1	Column 2	Column 3
Row 1	10 (2, 4, 4)	20 (6, 6, 8)	
Row 2	13 (3, 5, 5)	3 (1, 1, 1)	38 (6, 12, 20)
Row 3	4 (1, 1, 2)	4 (1, 1, 2)	

We can similarly form the following table for the last column:

	Column 1	Column 2	Column 3
Row 1	10 (2, 4,4)	20 (6, 6, 8)	6 (1, 2, 3)
Row 2	13 (3, 5, 5)	3 (1, 1, 1)	38 (6, 12, 20)
Row 3	4 (1, 1, 2)	4 (1, 1, 2)	10 (2, 3, 5)

From the table, we get that 8 pouches contain exactly one coin.

Correct Answer: 8

Explanation: We can make the following table from statement "the total amount of money kept in the three pouches in the first column of the third row is Rs. 4".

If the minimum and maximum values are 1, then the sum of the three pouches in the middle will be Rs. 3.

	Column 1	Column 2	Column 3
Row 1			
Row 2		3 (1, 1, 1)	
Row 3	4 (1, 1, 2)		

If we calculate the maximum and minimum values possible for each slot in column 1, we get that for the slot of column 1 and row 1, the maximum value possible is 10 {2, 4, 4}, while the minimum value possible is 8 {2, 2, 4}. Similarly, for the slot of column 1 and row 2, the maximum value possible is 13 {3, 5, 5}, while the minimum value possible is 11 {3, 3, 5}.

So, we can find by iteration that 10, 13, 4, ... {27} is the only sum possible for the slots of column 1.

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Similarly, we can find the amount for column 2.

For the slot, column 2 and row 1, the maximum value possible is 22 {6, 8, 8}, while the minimum value possible is 20 {6, 6, 8}.

For the slot, column 2 and row 3, the maximum value possible is 5 {1, 2, 3}, while the minimum value possible is 4 {1, 1, 2}.

Thus, {20, 3, 4} is the only solution possible.

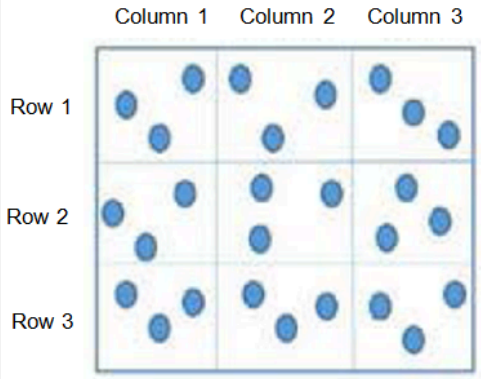
	Column 1	Column 2	Column 3
Row 1	10 (2, 4, 4)	20 (6, 6, 8)	
Row 2	13 (3, 5, 5)	3 (1, 1, 1)	38 (6, 12, 20)
Row 3	4 (1, 1, 2)	4 (1, 1, 2)	

We can similarly form the following table for the last column:

	Column 1	Column 2	Column 3
Row 1	10 (2, 4,4)	20 (6, 6, 8)	6 (1, 2, 3)
Row 2	13 (3, 5, 5)	3 (1, 1, 1)	38 (6, 12, 20)
Row 3	4 (1, 1, 2)	4 (1, 1, 2)	10 (2, 3, 5)

From the table, we get that 8 pouches contain exactly one coin.

Directions: Study the following information carefully and answer the given question.



	Column 1	Column 2	Column 3
Row 1	(2, 4)	(6, 8)	(1, 3)
Row 2	(3, 5)	(1, 1)	(6, 20)
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There are nine pouches in any of the three columns, as well as in any of the three rows. It is known that the average amount of money (in rupees) kept in the nine pouches in any column or in any row is an integer. It is also known that the total amount of money kept in the three pouches in the first column of the third row is Rs. 4.

Question: What is the number of slots for which the average amount (in rupees) of its three pouches is an integer?

Answer : 2We can make the following table from statement "the total amount of money kept in the three pouches in the first column of the third row is Rs. 4".

If the minimum and maximum values are 1, then the sum of the three pouches in the middle will be Rs. 3.

	Column 1	Column 2	Column 3
Row 1			
Row 2		3 (1, 1, 1)	
Row 3	4 (1, 1, 2)		

If we calculate the maximum and minimum values possible for each slot in column 1, we get that for the slot of column 1 and row 1, the maximum value possible is 10 {2, 4, 4}, while the minimum value possible is 8 {2, 2, 4}. Similarly, for the slot of column 1 and row 2, the maximum value possible is 13 {3, 5, 5}, while the minimum value possible is 11 {3, 3, 5}.

So, we can find by iteration that 10, 13, 4, ... {27} is the only sum possible for the slots of column 1.

We now know two elements of row 2, so we can iterate from the maximum and minimum values possible for the slot {column 3, row 2} that 38 is the only value possible for the slot.We can form the following table:

	Column 1	Column 2	Column 3
Row 1	10 (2, 4, 4)		
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Row 3	4 (1, 1, 2)		

Similarly, we can find the amount for column 2.

For the slot, column 2 and row 1, the maximum value possible is 22 {6, 8, 8}, while the minimum value possible is 20 {6, 6, 8}.

For the slot, column 2 and row 3, the maximum value possible is 5 {1, 2, 3}, while the minimum value possible is 4 {1, 1, 2}.

Thus, {20, 3, 4} is the only solution possible.

	Column 1	Column 2	Column 3
Row 1	10 (2, 4, 4)	20 (6, 6, 8)	
Row 2	13 (3, 5, 5)	3 (1, 1, 1)	38 (6, 12, 20)
Row 3	4 (1, 1, 2)	4 (1, 1, 2)	

We can similarly form the following table for the last column:

	Column 1	Column 2	Column 3
Row 1	10 (2, 4,4)	20 (6, 6, 8)	6 (1, 2, 3)
Row 2	13 (3, 5, 5)	3 (1, 1, 1)	38 (6, 12, 20)
Row 3	4 (1, 1, 2)	4 (1, 1, 2)	10 (2, 3, 5)

Row 1 column 3: 6, multiple of 3

Row 2 column 2: 3, multiple of 3

Only 2 slots are there in which the average amount (in rupees) of its three pouches is an integer.

Correct Answer: 2

Explanation: We can make the following table from statement "the total amount of money kept in the three pouches in the first column of the third row is Rs. 4".

If the minimum and maximum values are 1, then the sum of the three pouches in the middle will be Rs. 3.

	Column 1	Column 2	Column 3
Row 1			
Row 2		3 (1, 1, 1)	
Row 3	4 (1, 1, 2)		

If we calculate the maximum and minimum values possible for each slot in column 1, we get that for the slot of column 1 and row 1, the maximum value possible is 10 {2, 4, 4}, while the minimum value possible is 8 {2, 2, 4}. Similarly, for the slot of column 1 and row 2, the maximum value possible is 13 {3, 5, 5}, while the minimum value possible is 11 {3, 3, 5}.

So, we can find by iteration that 10, 13, 4, ... {27} is the only sum possible for the slots of column 1.

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	Column 1	Column 2	Column 3
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Row 3	4 (1, 1, 2)		

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Thus, {20, 3, 4} is the only solution possible.

	Column 1	Column 2	Column 3
Row 1	10 (2, 4, 4)	20 (6, 6, 8)	
Row 2	13 (3, 5, 5)	3 (1, 1, 1)	38 (6, 12, 20)
Row 3	4 (1, 1, 2)	4 (1, 1, 2)	

We can similarly form the following table for the last column:

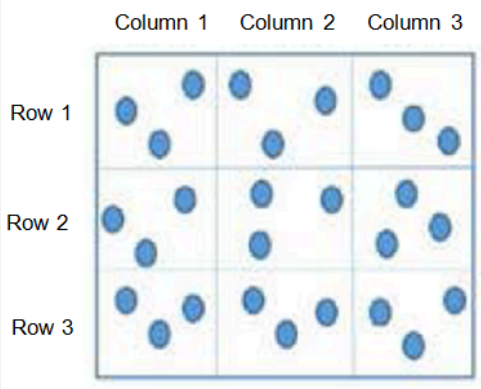
	Column 1	Column 2	Column 3
Row 1	10 (2, 4,4)	20 (6, 6, 8)	6 (1, 2, 3)
Row 2	13 (3, 5, 5)	3 (1, 1, 1)	38 (6, 12, 20)
Row 3	4 (1, 1, 2)	4 (1, 1, 2)	10 (2, 3, 5)

Row 1 column 3: 6, multiple of 3

Row 2 column 2: 3, multiple of 3

Only 2 slots are there in which the average amount (in rupees) of its three pouches is an integer.

Directions: Study the following information carefully and answer the given question.



	Column 1	Column 2	Column 3
Row 1	(2, 4)	(6, 8)	(1, 3)
Row 2	(3, 5)	(1, 1)	(6, 20)
Row 3	(1, 2)	(1, 2)	(2, 5)

Three pouches (each represented by a filled circle) are kept in each of the nine slots in a 3 × 3 grid, as shown in the figure. Every pouch has a certain number of one-rupee coins. The minimum and maximum amounts of money (in rupees) among the three pouches in each of the nine slots are given in the table. For example, we know that among the three pouches kept in the second column of the first row, the minimum amount in a pouch is Rs. 6 and the maximum amount is Rs. 8.

There are nine pouches in any of the three columns, as well as in any of the three rows. It is known that the average amount of money (in rupees) kept in the nine pouches in any column or in any row is an integer. It is also known that the total amount of money kept in the three pouches in the first column of the third row is Rs. 4.

Question: The number of slots for which the total amount in its three pouches strictly exceeds Rs. 10 is

Answer : 3We can make the following table from statement "the total amount of money kept in the three pouches in the first column of the third row is Rs. 4".

If the minimum and maximum values are 1, then the sum of the three pouches in the middle will be Rs. 3.

	Column 1	Column 2	Column 3
Row 1			
Row 2		3 (1, 1, 1)	
Row 3	4 (1, 1, 2)		

If we calculate the maximum and minimum values possible for each slot in column 1, we get that for the slot of column 1 and row 1, the maximum value possible is 10 {2, 4, 4}, while the minimum value possible is 8 {2, 2, 4}. Similarly, for the slot of column 1 and row 2, the maximum value possible is 13 {3, 5, 5}, while the minimum value possible is 11 {3, 3, 5}.

So, we can find by iteration that 10, 13, 4, ... {27} is the only sum possible for the slots of column 1.

We now know two elements of row 2, so we can iterate from the maximum and minimum values possible for the slot {column 3, row 2} that 38 is the only value possible for the slot.We can form the following table:

	Column 1	Column 2	Column 3
Row 1	10 (2, 4, 4)		
Row 2	13 (3, 5, 5)	3 (1, 1, 1)	38 (6, 12, 20)
Row 3	4 (1, 1, 2)		

Similarly, we can find the amount for column 2.

For the slot, column 2 and row 1, the maximum value possible is 22 {6, 8, 8}, while the minimum value possible is 20 {6, 6, 8}.

For the slot, column 2 and row 3, the maximum value possible is 5 {1, 2, 3}, while the minimum value possible is 4 {1, 1, 2}.

Thus, {20, 3, 4} is the only solution possible.

	Column 1	Column 2	Column 3
Row 1	10 (2, 4, 4)	20 (6, 6, 8)	
Row 2	13 (3, 5, 5)	3 (1, 1, 1)	38 (6, 12, 20)
Row 3	4 (1, 1, 2)	4 (1, 1, 2)	

We can similarly form the following table for the last column:

	Column 1	Column 2	Column 3
Row 1	10 (2, 4,4)	20 (6, 6, 8)	6 (1, 2, 3)
Row 2	13 (3, 5, 5)	3 (1, 1, 1)	38 (6, 12, 20)
Row 3	4 (1, 1, 2)	4 (1, 1, 2)	10 (2, 3, 5)

From the table,

Column 1 Row 2: 13

Column 2 Row 1: 20

Column 3 Row 2: 38

Only 3 slots are there for which the total amount in its three pouches strictly exceeds Rs. 10.

Correct Answer: 3

Explanation: We can make the following table from statement "the total amount of money kept in the three pouches in the first column of the third row is Rs. 4".

If the minimum and maximum values are 1, then the sum of the three pouches in the middle will be Rs. 3.

	Column 1	Column 2	Column 3
Row 1			
Row 2		3 (1, 1, 1)	
Row 3	4 (1, 1, 2)		

If we calculate the maximum and minimum values possible for each slot in column 1, we get that for the slot of column 1 and row 1, the maximum value possible is 10 {2, 4, 4}, while the minimum value possible is 8 {2, 2, 4}. Similarly, for the slot of column 1 and row 2, the maximum value possible is 13 {3, 5, 5}, while the minimum value possible is 11 {3, 3, 5}.

So, we can find by iteration that 10, 13, 4, ... {27} is the only sum possible for the slots of column 1.

We now know two elements of row 2, so we can iterate from the maximum and minimum values possible for the slot {column 3, row 2} that 38 is the only value possible for the slot.We can form the following table:

	Column 1	Column 2	Column 3
Row 1	10 (2, 4, 4)		
Row 2	13 (3, 5, 5)	3 (1, 1, 1)	38 (6, 12, 20)
Row 3	4 (1, 1, 2)		

Similarly, we can find the amount for column 2.

For the slot, column 2 and row 1, the maximum value possible is 22 {6, 8, 8}, while the minimum value possible is 20 {6, 6, 8}.

For the slot, column 2 and row 3, the maximum value possible is 5 {1, 2, 3}, while the minimum value possible is 4 {1, 1, 2}.

Thus, {20, 3, 4} is the only solution possible.

	Column 1	Column 2	Column 3
Row 1	10 (2, 4, 4)	20 (6, 6, 8)	
Row 2	13 (3, 5, 5)	3 (1, 1, 1)	38 (6, 12, 20)
Row 3	4 (1, 1, 2)	4 (1, 1, 2)	

We can similarly form the following table for the last column:

	Column 1	Column 2	Column 3
Row 1	10 (2, 4,4)	20 (6, 6, 8)	6 (1, 2, 3)
Row 2	13 (3, 5, 5)	3 (1, 1, 1)	38 (6, 12, 20)
Row 3	4 (1, 1, 2)	4 (1, 1, 2)	10 (2, 3, 5)

From the table,

Column 1 Row 2: 13

Column 2 Row 1: 20

Column 3 Row 2: 38

Only 3 slots are there for which the total amount in its three pouches strictly exceeds Rs. 10.

Directions: Study the following information carefully and answer the question.

Ten players, as listed in the table below, participated in a rifle shooting competition comprising 10 rounds. Each round had 6 participants. Players numbered 1 through 6 participated in Round 1, players 2 through 7 in Round 2, ..., players 5 through 10 in Round 5, players 6 through 10 and 1 in Round 6, players 7 through 10, 1 and 2 in Round 7, and so on. The top three performances in each round were awarded 7, 3 and 1 points, respectively. There were no ties in any of the 10 rounds. The table below gives the total number of points obtained by the 10 players after Round 6 and Round 10.

Player No.	Player Name	Points After Round 6	Points After Round 10
1	Amita	8	18
2	Bala	2	5
3	Chen	3	6
4	David	6	6
5	Eric	3	10
6	Fatima	10	10
7	Gordon	17	17
8	Hansa	1	4
9	Ikea	2	17
10	Joshin	14	17

The following information is known about Rounds 1 through 6:
1. Gordon did not score consecutively in any two rounds.
2. Eric and Fatima both scored in a round.

The following information is known about Rounds 7 through 10:
1. Only two players scored in three consecutive rounds. One of them was Chen. No other player scored in any two consecutive rounds.
2. Joshin scored in Round 7, while Amita scored in Round 10.
3. No player scored in all the four rounds.

Question: What were the scores of Chen, David, and Eric respectively after Round 3?

option 1. 3, 0, 3

option 2. 3, 3, 3

option 3. 3, 6, 3

option 4. 3, 3, 0

Correct Answer: 2

Explanation: From the conditions given in the premises, we can make the following table:

	1	2	3	4	5	6	T	7	8	9	10	TT
A		X	X	X	X		8					18
B			X	X	X	X	2					5
C				X	X	X	3	X				6
D					X	X	6	X	X			6
E						X	3	X	X	X		10
F							10	X	X	X	X	10
G	X						17		X	X	X	17
H	X	X					1			X	X	4
I	X	X	X				2				X	17
J	X	X	X	X			14					17

The information known about Rounds 1 through 6:

1. Gordon (G) did not score consecutively in any two rounds.

2. Eric (E) and Fatima (F) both scored in a round.

By observing the table:

1. Jordan (J) scored 7 points in both Rounds 5 and 6.

2. Amita (A) scored (1, 7) points, then she scored 7 in Round 1.

3. Bala (B) scored 1 point in both Rounds 1 and 2.

4. Ikea (I) scored 1 point in Rounds 4 and 5.

5. Gordon (G - 7, 7, 3) did not score consecutively in any two rounds, so he scored in Rounds 2, 4 and 6, respectively.

We can make the following table from the details given above.

	1	2	3	4	5	6	T	7	8	9	10	TT
A	7	X	X	X	X	1	8					18
B	1	1	X	X	X	X	2					5
C	3	0	0	X	X	X	3	X				6
D	0	3	0	3	X	X	6	X	X			6
E	0	0	3	0	0	X	3	X	X	X		10
F	0	0	7	0	3	0	10	X	X	X	X	10
G	X	7	0	7	0	3	17		X	X	X	17
H	X	X	1	0	0	0	1			X	X	4
I	X	X	X	1	1	0	2				X	17
J	X	X	X	X	7	7	14					17

Notations: T - Total after Round 6; TT - Total after Round 10

1. Only two players scored in three consecutive rounds. One of them was Chen. So, he scored 1 point in Rounds 8, 9 and 10.

2. Ikea scored 15 points (1, 7, 7) in three rounds, respectively.

3. Eric scored 7 in Round 10.

4. Amita would score 3 in Rounds 10, and 7 in Round 7.

We can make the following table:

	1	2	3	4	5	6	T	7	8	9	10	TT
A	7	X	X	X	X	1	8	7	0	0	3	18
B	1	1	X	X	X	X	2	0	0	3	0	5
C	3	0	0	X	X	X	3	X	1	1	1	6
D	0	3	0	3	X	X	6	X	X	0	0	6
E	0	0	3	0	0	X	3	X	X	X	7	10
F	0	0	7	0	3	0	10	X	X	X	X	10
G	X	7	0	7	0	3	17	0	X	X	X	17
H	X	X	1	0	0	0	1	0	3	X	X	4
I	X	X	X	1	1	0	2	1	7	7	X	17
J	X	X	X	X	7	7	14	3	0	0	0	17

Respective scores of Chen, David, and Eric after Round 3 = 3, 3, 3

Therefore, option 2 is the correct answer.

Directions: Study the following information carefully and answer the question.

Ten players, as listed in the table below, participated in a rifle shooting competition comprising 10 rounds. Each round had 6 participants. Players numbered 1 through 6 participated in Round 1, players 2 through 7 in Round 2, ..., players 5 through 10 in Round 5, players 6 through 10 and 1 in Round 6, players 7 through 10, 1 and 2 in Round 7, and so on. The top three performances in each round were awarded 7, 3 and 1 points, respectively. There were no ties in any of the 10 rounds. The table below gives the total number of points obtained by the 10 players after Round 6 and Round 10.

Player No.	Player Name	Points After Round 6	Points After Round 10
1	Amita	8	18
2	Bala	2	5
3	Chen	3	6
4	David	6	6
5	Eric	3	10
6	Fatima	10	10
7	Gordon	17	17
8	Hansa	1	4
9	Ikea	2	17
10	Joshin	14	17

The following information is known about Rounds 1 through 6:
1. Gordon did not score consecutively in any two rounds.
2. Eric and Fatima both scored in a round.

The following information is known about Rounds 7 through 10:
1. Only two players scored in three consecutive rounds. One of them was Chen. No other player scored in any two consecutive rounds.
2. Joshin scored in Round 7, while Amita scored in Round 10.
3. No player scored in all the four rounds.

Question: Which three players were in the last three positions after Round 4?

option 1. Bala, Chen, Gordon

option 2. Bala, Ikea, Joshin

option 3. Hansa, Ikea, Joshin

option 4. Bala, Hansa, Ikea

Correct Answer: 3

Explanation: From the conditions given in the premises, we can make the following table:

	1	2	3	4	5	6	T	7	8	9	10	TT
A		X	X	X	X		8					18
B			X	X	X	X	2					5
C				X	X	X	3	X				6
D					X	X	6	X	X			6
E						X	3	X	X	X		10
F							10	X	X	X	X	10
G	X						17		X	X	X	17
H	X	X					1			X	X	4
I	X	X	X				2				X	17
J	X	X	X	X			14					17

The information known about Rounds 1 through 6:

1. Gordon (G) did not score consecutively in any two rounds.

2. Eric (E) and Fatima (F) both scored in a round.

By observing the table:

1. Jordan (J) scored 7 points in both Rounds 5 and 6.

2. Amita (A) scored (1, 7) points, then she scored 7 in Round 1.

3. Bala (B) scored 1 point in both Rounds 1 and 2.

4. Ikea (I) scored 1 point in Rounds 4 and 5.

5. Gordon (G - 7, 7, 3) did not score consecutively in any two rounds, so he scored in Rounds 2, 4 and 6, respectively.

We can make the following table from the details given above.

	1	2	3	4	5	6	T	7	8	9	10	TT
A	7	X	X	X	X	1	8					18
B	1	1	X	X	X	X	2					5
C	3	0	0	X	X	X	3	X				6
D	0	3	0	3	X	X	6	X	X			6
E	0	0	3	0	0	X	3	X	X	X		10
F	0	0	7	0	3	0	10	X	X	X	X	10
G	X	7	0	7	0	3	17		X	X	X	17
H	X	X	1	0	0	0	1			X	X	4
I	X	X	X	1	1	0	2				X	17
J	X	X	X	X	7	7	14					17

Notations: T - Total after Round 6; TT - Total after Round 10

1. Only two players scored in three consecutive rounds. One of them was Chen. So, he scored 1 point in Rounds 8, 9 and 10.

2. Ikea scored 15 points (1, 7, 7) in three rounds, respectively.

3. Eric scored 7 in Round 10.

4. Amita would score 3 in Rounds 10, and 7 in Round 7.

We can make the following table:

	1	2	3	4	5	6	T	7	8	9	10	TT
A	7	X	X	X	X	1	8	7	0	0	3	18
B	1	1	X	X	X	X	2	0	0	3	0	5
C	3	0	0	X	X	X	3	X	1	1	1	6
D	0	3	0	3	X	X	6	X	X	0	0	6
E	0	0	3	0	0	X	3	X	X	X	7	10
F	0	0	7	0	3	0	10	X	X	X	X	10
G	X	7	0	7	0	3	17	0	X	X	X	17
H	X	X	1	0	0	0	1	0	3	X	X	4
I	X	X	X	1	1	0	2	1	7	7	X	17
J	X	X	X	X	7	7	14	3	0	0	0	17

Hansa, Ikea, and Joshin were in the last three positions after Round 4.

Therefore, option 3 is the correct answer.

Directions: Study the following information carefully and answer the question.

Ten players, as listed in the table below, participated in a rifle shooting competition comprising 10 rounds. Each round had 6 participants. Players numbered 1 through 6 participated in Round 1, players 2 through 7 in Round 2, ..., players 5 through 10 in Round 5, players 6 through 10 and 1 in Round 6, players 7 through 10, 1 and 2 in Round 7, and so on. The top three performances in each round were awarded 7, 3 and 1 points, respectively. There were no ties in any of the 10 rounds. The table below gives the total number of points obtained by the 10 players after Round 6 and Round 10.

Player No.	Player Name	Points After Round 6	Points After Round 10
1	Amita	8	18
2	Bala	2	5
3	Chen	3	6
4	David	6	6
5	Eric	3	10
6	Fatima	10	10
7	Gordon	17	17
8	Hansa	1	4
9	Ikea	2	17
10	Joshin	14	17

The following information is known about Rounds 1 through 6:
1. Gordon did not score consecutively in any two rounds.
2. Eric and Fatima both scored in a round.

The following information is known about Rounds 7 through 10:
1. Only two players scored in three consecutive rounds. One of them was Chen. No other player scored in any two consecutive rounds.
2. Joshin scored in Round 7, while Amita scored in Round 10.
3. No player scored in all the four rounds.

Question: Which player scored points in maximum number of rounds?

option 1. Amita

option 2. Chen

option 3. Joshin

option 4. Ikea

Correct Answer: 4

Explanation: From the conditions given in the premises, we can make the following table:

	1	2	3	4	5	6	T	7	8	9	10	TT
A		X	X	X	X		8					18
B			X	X	X	X	2					5
C				X	X	X	3	X				6
D					X	X	6	X	X			6
E						X	3	X	X	X		10
F							10	X	X	X	X	10
G	X						17		X	X	X	17
H	X	X					1			X	X	4
I	X	X	X				2				X	17
J	X	X	X	X			14					17

The information known about Rounds 1 through 6:

1. Gordon (G) did not score consecutively in any two rounds.

2. Eric (E) and Fatima (F) both scored in a round.

By observing the table:

1. Jordan (J) scored 7 points in both Rounds 5 and 6.

2. Amita (A) scored (1, 7) points, then she scored 7 in Round 1.

3. Bala (B) scored 1 point in both Rounds 1 and 2.

4. Ikea (I) scored 1 point in Rounds 4 and 5.

5. Gordon (G - 7, 7, 3) did not score consecutively in any two rounds, so he scored in Rounds 2, 4 and 6, respectively.

We can make the following table from the details given above.

	1	2	3	4	5	6	T	7	8	9	10	TT
A	7	X	X	X	X	1	8					18
B	1	1	X	X	X	X	2					5
C	3	0	0	X	X	X	3	X				6
D	0	3	0	3	X	X	6	X	X			6
E	0	0	3	0	0	X	3	X	X	X		10
F	0	0	7	0	3	0	10	X	X	X	X	10
G	X	7	0	7	0	3	17		X	X	X	17
H	X	X	1	0	0	0	1			X	X	4
I	X	X	X	1	1	0	2				X	17
J	X	X	X	X	7	7	14					17

Notations: T - Total after Round 6; TT - Total after Round 10

1. Only two players scored in three consecutive rounds. One of them was Chen. So, he scored 1 point in Rounds 8, 9 and 10.

2. Ikea scored 15 points (1, 7, 7) in three rounds, respectively.

3. Eric scored 7 in Round 10.

4. Amita would score 3 in Rounds 10, and 7 in Round 7.

We can make the following table:

	1	2	3	4	5	6	T	7	8	9	10	TT
A	7	X	X	X	X	1	8	7	0	0	3	18
B	1	1	X	X	X	X	2	0	0	3	0	5
C	3	0	0	X	X	X	3	X	1	1	1	6
D	0	3	0	3	X	X	6	X	X	0	0	6
E	0	0	3	0	0	X	3	X	X	X	7	10
F	0	0	7	0	3	0	10	X	X	X	X	10
G	X	7	0	7	0	3	17	0	X	X	X	17
H	X	X	1	0	0	0	1	0	3	X	X	4
I	X	X	X	1	1	0	2	1	7	7	X	17
J	X	X	X	X	7	7	14	3	0	0	0	17

Ikea scored points in maximum number of rounds.

Therefore, option 4 is the correct answer.

Directions: Study the following information carefully and answer the question.

Ten players, as listed in the table below, participated in a rifle shooting competition comprising 10 rounds. Each round had 6 participants. Players numbered 1 through 6 participated in Round 1, players 2 through 7 in Round 2, ..., players 5 through 10 in Round 5, players 6 through 10 and 1 in Round 6, players 7 through 10, 1 and 2 in Round 7, and so on. The top three performances in each round were awarded 7, 3 and 1 points, respectively. There were no ties in any of the 10 rounds. The table below gives the total number of points obtained by the 10 players after Round 6 and Round 10.

Player No.	Player Name	Points After Round 6	Points After Round 10
1	Amita	8	18
2	Bala	2	5
3	Chen	3	6
4	David	6	6
5	Eric	3	10
6	Fatima	10	10
7	Gordon	17	17
8	Hansa	1	4
9	Ikea	2	17
10	Joshin	14	17

The following information is known about Rounds 1 through 6:
1. Gordon did not score consecutively in any two rounds.
2. Eric and Fatima both scored in a round.

The following information is known about Rounds 7 through 10:
1. Only two players scored in three consecutive rounds. One of them was Chen. No other player scored in any two consecutive rounds.
2. Joshin scored in Round 7, while Amita scored in Round 10.
3. No player scored in all the four rounds.

Question: Which players scored points in the last round?

option1. Amita, Bala, Chen

option 2. Amita, Chen, David

option 3. Amita, Chen, Eric

option 4. Amita, Eric, Joshin

Correct Answer: 3

Explanation: From the conditions given in the premises, we can make the following table:

	1	2	3	4	5	6	T	7	8	9	10	TT
A		X	X	X	X		8					18
B			X	X	X	X	2					5
C				X	X	X	3	X				6
D					X	X	6	X	X			6
E						X	3	X	X	X		10
F							10	X	X	X	X	10
G	X						17		X	X	X	17
H	X	X					1			X	X	4
I	X	X	X				2				X	17
J	X	X	X	X			14					17

The information known about Rounds 1 through 6:

1. Gordon (G) did not score consecutively in any two rounds.

2. Eric (E) and Fatima (F) both scored in a round.

By observing the table:

1. Jordan (J) scored 7 points in both Rounds 5 and 6.

2. Amita (A) scored (1, 7) points, then she scored 7 in Round 1.

3. Bala (B) scored 1 point in both Rounds 1 and 2.

4. Ikea (I) scored 1 point in Rounds 4 and 5.

5. Gordon (G - 7, 7, 3) did not score consecutively in any two rounds, so he scored in Rounds 2, 4 and 6, respectively.

We can make the following table from the details given above.

	1	2	3	4	5	6	T	7	8	9	10	TT
A	7	X	X	X	X	1	8					18
B	1	1	X	X	X	X	2					5
C	3	0	0	X	X	X	3	X				6
D	0	3	0	3	X	X	6	X	X			6
E	0	0	3	0	0	X	3	X	X	X		10
F	0	0	7	0	3	0	10	X	X	X	X	10
G	X	7	0	7	0	3	17		X	X	X	17
H	X	X	1	0	0	0	1			X	X	4
I	X	X	X	1	1	0	2				X	17
J	X	X	X	X	7	7	14					17

Notations: T - Total after Round 6; TT - Total after Round 10

1. Only two players scored in three consecutive rounds. One of them was Chen. So, he scored 1 point in Rounds 8, 9 and 10.

2. Ikea scored 15 points (1, 7, 7) in three rounds, respectively.

3. Eric scored 7 in Round 10.

4. Amita would score 3 in Rounds 10, and 7 in Round 7.

We can make the following table:

	1	2	3	4	5	6	T	7	8	9	10	TT
A	7	X	X	X	X	1	8	7	0	0	3	18
B	1	1	X	X	X	X	2	0	0	3	0	5
C	3	0	0	X	X	X	3	X	1	1	1	6
D	0	3	0	3	X	X	6	X	X	0	0	6
E	0	0	3	0	0	X	3	X	X	X	7	10
F	0	0	7	0	3	0	10	X	X	X	X	10
G	X	7	0	7	0	3	17	0	X	X	X	17
H	X	X	1	0	0	0	1	0	3	X	X	4
I	X	X	X	1	1	0	2	1	7	7	X	17
J	X	X	X	X	7	7	14	3	0	0	0	17

Amita, Chen and Eric scored points in the last round.

Therefore, option 3 is the correct answer.

Directions: Study the following information carefully and answer the question.

In the table below, the check marks indicate all languages spoken by five people: Paula, Quentin, Robert, Sally and Terence. For example, Paula speaks only Chinese and English.

	Arabic	Basque	Chinese	Dutch	English	French
Paula			✓		✓	
Quentin				✓	✓	
Robert	✓					✓
Sally		✓			✓	
Terence			✓			✓

These five people form three teams, Team 1, Team 2 and Team 3. Each team has either 2 or 3 members. A team is said to speak a particular language if at least one of its members speaks that language.

The following facts are known.

(1) Each team speaks exactly four languages and has the same number of members.
(2) English and Chinese are spoken by all three teams, Basque and French by exactly two teams and the other languages by exactly one team.
(3) None of the teams includes both Quentin and Robert.
(4) Paula and Sally are together in exactly two teams.
(5) Robert is in Team 1 and Quentin is in Team 3.

Question: Who among the following four is not a member of Team 2?

option 1. Quentin

option 2. Sally

option 3. Terence

option 4. Paula

Correct Answer: 1

Explanation: From statements 1 and 2, "Each team speaks exactly four languages. English and Chinese are spoken by all three teams, Basque and French by exactly two teams and the other languages by exactly one team", multiple options are possible.

In the following tables, A, B and C can be any team among Team 1, Team 2 and Team 3.

A	B	C
English	English	English
Chinese	Chinese	Chinese
Basque	Basque	Arabic
French	French	Dutch

A	B	C
English	English	English
Chinese	Chinese	Chinese
Basque	Basque	Arabic
Dutch	French	French

A	B	C
English	English	English
Chinese	Chinese	Chinese
Basque	Basque	Dutch
Arabic	French	French

From the data given in the question, the person who speaks Arabic also speaks French. Thus, the only option possible is Table 2.

A	B	C
English	English	English
Chinese	Chinese	Chinese
Basque	Basque	Arabic
Dutch	French	French

According to statement 4, Paula and Sally are together in exactly two teams.

Sally knows Basque. Thus, she will be in groups A and B, with Paula.

According to statement 5, Robert (Arabic) is in Team 1 and Quentin (Dutch) is in Team 3.

Thus, Group C is Team 1 and Group A is Team 3.

Team 3		Team 2		Team 1	
English	Paula, Sally, Quentin	English	Paula, Sally	English	Paula
Chinese	Paula	Chinese	Paula, Terence	Chinese	Paula, Terence
Basque	Sally	Basque	Sally	Arabic	Terence, Robert
Dutch	Quentin	French	Terence	French	Robert

From the table, Quentin is not a member of Team 2.

Therefore, option 1 is the correct answer.

Directions: Study the following information carefully and answer the question.

In the table below, the check marks indicate all languages spoken by five people: Paula, Quentin, Robert, Sally and Terence. For example, Paula speaks only Chinese and English.

	Arabic	Basque	Chinese	Dutch	English	French
Paula			✓		✓	
Quentin				✓	✓	
Robert	✓					✓
Sally		✓			✓	
Terence			✓			✓

These five people form three teams, Team 1, Team 2 and Team 3. Each team has either 2 or 3 members. A team is said to speak a particular language if at least one of its members speaks that language.

The following facts are known.

(1) Each team speaks exactly four languages and has the same number of members.
(2) English and Chinese are spoken by all three teams, Basque and French by exactly two teams and the other languages by exactly one team.
(3) None of the teams includes both Quentin and Robert.
(4) Paula and Sally are together in exactly two teams.
(5) Robert is in Team 1 and Quentin is in Team 3.

Question: Who among the following four people is a part of exactly two teams?

option 1. Paula

option 2. Robert

option3. Sally

option4. Quentin

Correct Answer: 3

Explanation: From statements 1 and 2, "Each team speaks exactly four languages. English and Chinese are spoken by all three teams, Basque and French by exactly two teams and the other languages by exactly one team", multiple options are possible.

In the following tables, A, B and C can be any team among Team 1, Team 2 and Team 3.

A	B	C
English	English	English
Chinese	Chinese	Chinese
Basque	Basque	Arabic
French	French	Dutch

A	B	C
English	English	English
Chinese	Chinese	Chinese
Basque	Basque	Arabic
Dutch	French	French

A	B	C
English	English	English
Chinese	Chinese	Chinese
Basque	Basque	Dutch
Arabic	French	French

From the data given in the question, the person who speaks Arabic also speaks French. Thus, the only option possible is Table 2.

A	B	C
English	English	English
Chinese	Chinese	Chinese
Basque	Basque	Arabic
Dutch	French	French

According to statement 4, Paula and Sally are together in exactly two teams.

Sally knows Basque. Thus, she will be in groups A and B, with Paula.

According to statement 5, Robert (Arabic) is in Team 1 and Quentin (Dutch) is in Team 3.

Thus, Group C is Team 1 and Group A is Team 3.

Team 3		Team 2		Team 1	
English	Paula, Sally, Quentin	English	Paula, Sally	English	Paula
Chinese	Paula	Chinese	Paula, Terence	Chinese	Paula, Terence
Basque	Sally	Basque	Sally	Arabic	Terence, Robert
Dutch	Quentin	French	Terence	French	Robert

From the table and options, Sally is a part of exactly two teams.

Therefore, option 3 is the correct answer.

Directions: Study the following information carefully and answer the question.

In the table below, the check marks indicate all languages spoken by five people: Paula, Quentin, Robert, Sally and Terence. For example, Paula speaks only Chinese and English.

	Arabic	Basque	Chinese	Dutch	English	French
Paula			✓		✓	
Quentin				✓	✓	
Robert	✓					✓
Sally		✓			✓	
Terence			✓			✓

These five people form three teams, Team 1, Team 2 and Team 3. Each team has either 2 or 3 members. A team is said to speak a particular language if at least one of its members speaks that language.

The following facts are known.

(1) Each team speaks exactly four languages and has the same number of members.
(2) English and Chinese are spoken by all three teams, Basque and French by exactly two teams and the other languages by exactly one team.
(3) None of the teams includes both Quentin and Robert.
(4) Paula and Sally are together in exactly two teams.
(5) Robert is in Team 1 and Quentin is in Team 3.

Question: Who among the five people is a member of all teams?

option1. No one

option 2. Paula

option3. Terence

option 4. Sally

Correct Answer: 2

Explanation: From statements 1 and 2, "Each team speaks exactly four languages. English and Chinese are spoken by all three teams, Basque and French by exactly two teams and the other languages by exactly one team", multiple options are possible.

In the following tables, A, B and C can be any team among Team 1, Team 2 and Team 3.

A	B	C
English	English	English
Chinese	Chinese	Chinese
Basque	Basque	Arabic
French	French	Dutch

A	B	C
English	English	English
Chinese	Chinese	Chinese
Basque	Basque	Arabic
Dutch	French	French

A	B	C
English	English	English
Chinese	Chinese	Chinese
Basque	Basque	Dutch
Arabic	French	French

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A	B	C
English	English	English
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Sally knows Basque. Thus, she will be in groups A and B, with Paula.

According to statement 5, Robert (Arabic) is in Team 1 and Quentin (Dutch) is in Team 3.

Thus, Group C is Team 1 and Group A is Team 3.

Team 3		Team 2		Team 1	
English	Paula, Sally, Quentin	English	Paula, Sally	English	Paula
Chinese	Paula	Chinese	Paula, Terence	Chinese	Paula, Terence
Basque	Sally	Basque	Sally	Arabic	Terence, Robert
Dutch	Quentin	French	Terence	French	Robert

From the table, Paula is a member of all teams.

Therefore, option 2 is the correct answer.

Directions: Study the following information carefully and answer the question.

In the table below, the check marks indicate all languages spoken by five people: Paula, Quentin, Robert, Sally and Terence. For example, Paula speaks only Chinese and English.

	Arabic	Basque	Chinese	Dutch	English	French
Paula			✓		✓	
Quentin				✓	✓	
Robert	✓					✓
Sally		✓			✓	
Terence			✓			✓

These five people form three teams, Team 1, Team 2 and Team 3. Each team has either 2 or 3 members. A team is said to speak a particular language if at least one of its members speaks that language.

The following facts are known.

(1) Each team speaks exactly four languages and has the same number of members.
(2) English and Chinese are spoken by all three teams, Basque and French by exactly two teams and the other languages by exactly one team.
(3) None of the teams includes both Quentin and Robert.
(4) Paula and Sally are together in exactly two teams.
(5) Robert is in Team 1 and Quentin is in Team 3.

Question: Apart from Chinese and English, which languages are spoken by Team 1?

option 1. Arabic and Basque

option2. Basque and French

option3. Basque and Dutch

option 4. Arabic and French

Correct Answer: 4

Explanation: From statements 1 and 2, "Each team speaks exactly four languages. English and Chinese are spoken by all three teams, Basque and French by exactly two teams and the other languages by exactly one team", multiple options are possible.

In the following tables, A, B and C can be any team among Team 1, Team 2 and Team 3.

A	B	C
English	English	English
Chinese	Chinese	Chinese
Basque	Basque	Arabic
French	French	Dutch

A	B	C
English	English	English
Chinese	Chinese	Chinese
Basque	Basque	Arabic
Dutch	French	French

A	B	C
English	English	English
Chinese	Chinese	Chinese
Basque	Basque	Dutch
Arabic	French	French

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Sally knows Basque. Thus, she will be in groups A and B, with Paula.

According to statement 5, Robert (Arabic) is in Team 1 and Quentin (Dutch) is in Team 3.

Thus, Group C is Team 1 and Group A is Team 3.

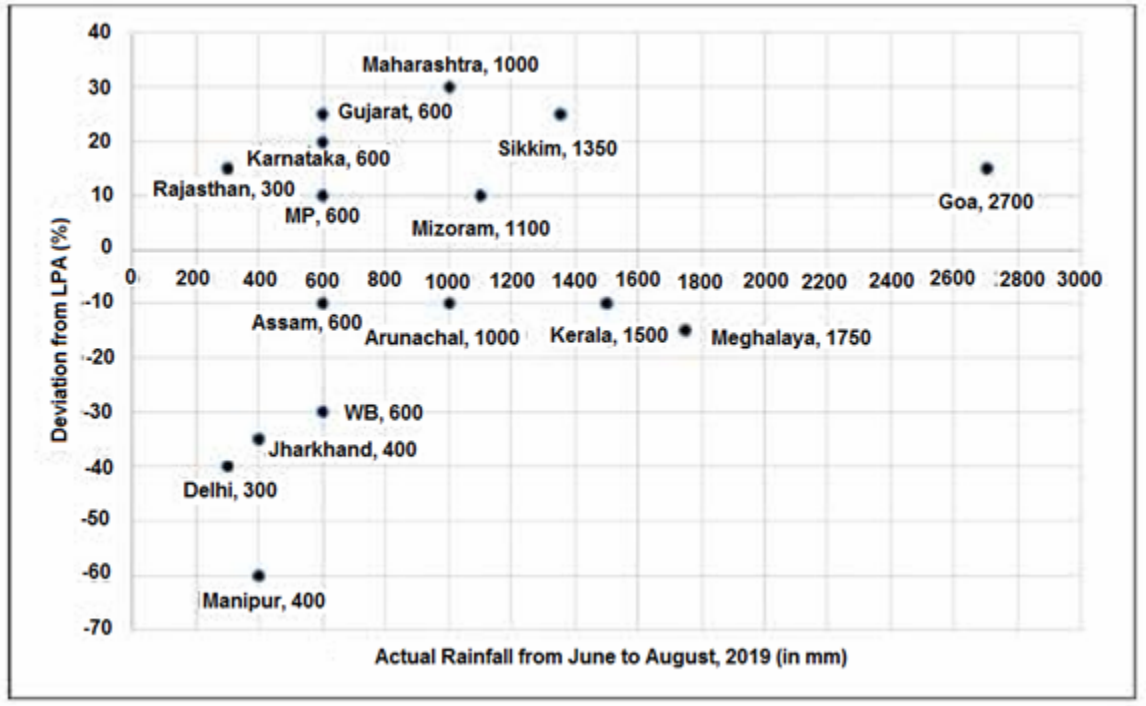
Team 3		Team 2		Team 1	
English	Paula, Sally, Quentin	English	Paula, Sally	English	Paula
Chinese	Paula	Chinese	Paula, Terence	Chinese	Paula, Terence
Basque	Sally	Basque	Sally	Arabic	Terence, Robert
Dutch	Quentin	French	Terence	French	Robert

From the table, we get that members of Team 1 speak Arabic, French, English and Chinese.

Therefore, option 4 is the correct answer.

Directions: Study the following information carefully and answer the given question.

To compare the rainfall data, India Meteorological Department (IMD) calculated the Long Period Average (LPA) of rainfall during period June-August for each of the 16 states. The figure given below shows the actual rainfall (measured in mm) during June-August 2019 and the percentage deviations from LPA of respective states in 2018. Each state along with its actual rainfall is presented in the figure.



Question: If a 'Heavy Monsoon State' is defined as a state with actual rainfall from June to August 2019 of 900 mm or more, then approximately what percentage of 'Heavy Monsoon States' have a negative deviation from respective LPAs in 2019?

option 1. 42.86

option 2. 57.14

option 3. 75.00

option4. 14.29

Correct Answer: 1

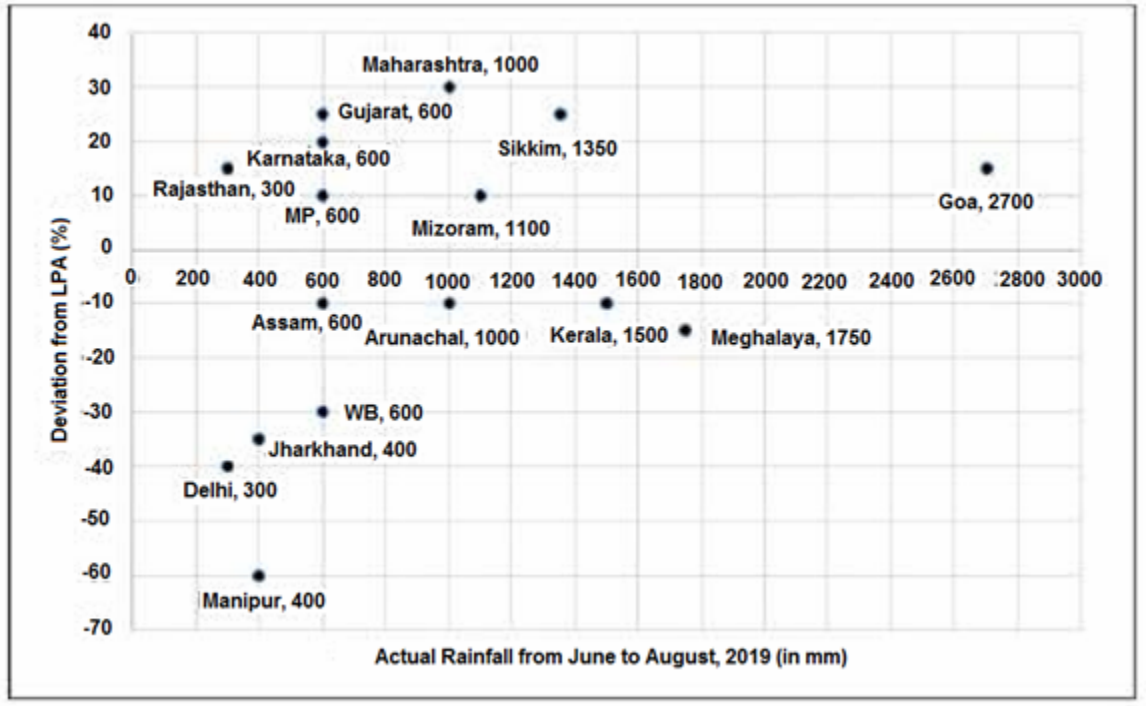
Explanation: Negative deviation as well as rainfall greater than 900 is for Arunachal, Kerala and Meghalaya.

Rainfall greater than 900 and positive deviation are for Maharashtra, Mizoram, Sikkim and Goa.

Hence, required percentage = $\frac{3}{7} \times 100 = 42.86\%$

Directions: Study the following information carefully and answer the given question.

To compare the rainfall data, India Meteorological Department (IMD) calculated the Long Period Average (LPA) of rainfall during period June-August for each of the 16 states. The figure given below shows the actual rainfall (measured in mm) during June-August 2019 and the percentage deviations from LPA of respective states in 2018. Each state along with its actual rainfall is presented in the figure.



Question: If a 'Low Monsoon State' is defined as a state with actual rainfall from June to August 2019 of 750 mm or less, then what is the median 'deviation from LPA' (as defined in the Y-axis of the figure) of 'Low Monsoon States'?

option 1. 10%

option 2. -30%

option 3. -10%

option4. -20%

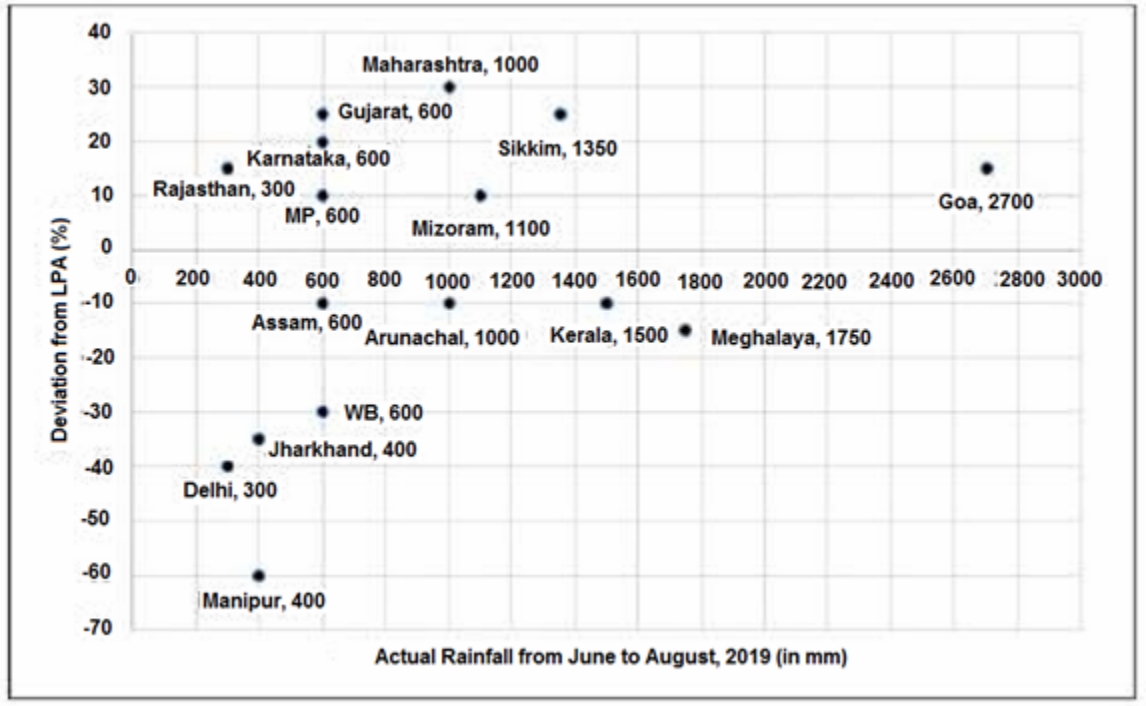
Correct Answer: 3

Explanation: All the states which satisfy the condition for 'Low Monsoon State' are Gujarat (+25%), Karnataka (+20%), Rajasthan (+15%), MP (+10%), Assam (-10%), WB (-30%), Jharkhand (-35%), Delhi (-40%) and Manipur (-60%).

The median of all the deviations is -10% (Assam).

Directions: Study the following information carefully and answer the given question.

To compare the rainfall data, India Meteorological Department (IMD) calculated the Long Period Average (LPA) of rainfall during period June-August for each of the 16 states. The figure given below shows the actual rainfall (measured in mm) during June-August 2019 and the percentage deviations from LPA of respective states in 2018. Each state along with its actual rainfall is presented in the figure.



Question: What is the average rainfall of all states that have actual rainfall of 600 mm or less in 2019 and have a negative deviation from LPA?

option 1. 460 mm

option 2. 367 mm

option 3. 500 mm

option 4. 450 mm

Correct Answer: 1

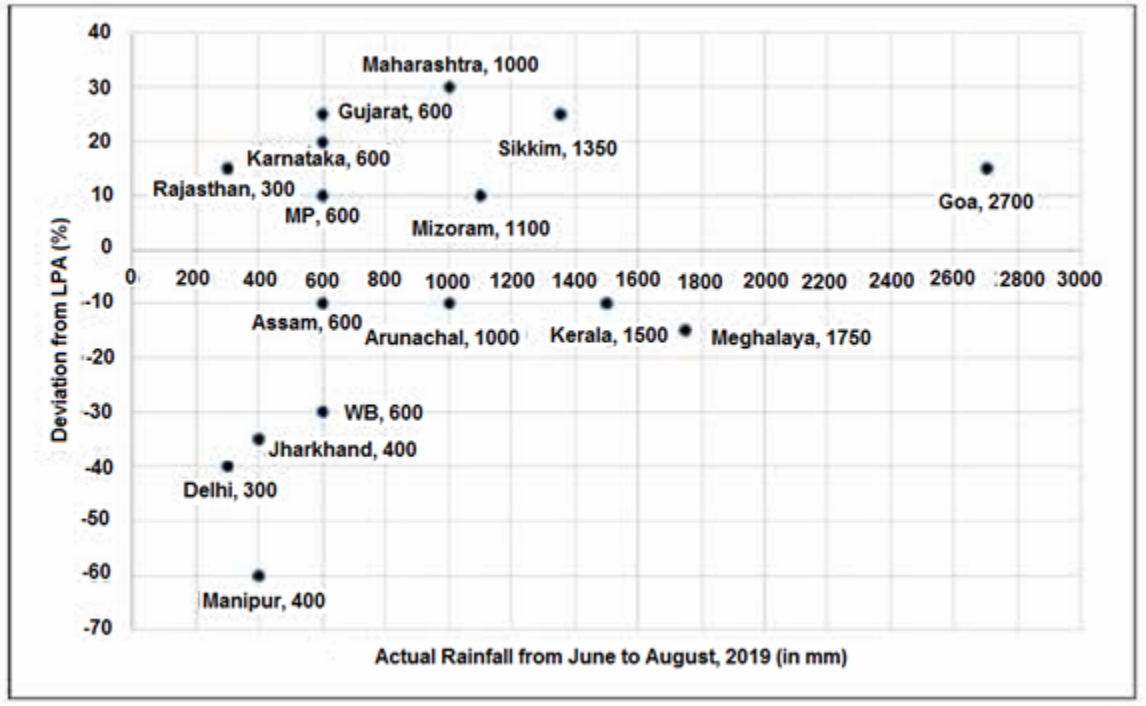
Explanation: We can see that there are five states (Assam, WB, Jharkhand, Delhi and Manipur) with rainfall less than 600 and negative deviation.

Required average of states with rainfall less than 600 and negative deviation = (600 + 600 + 400 + 300 + 400)/5 = 460

Therefore, option 1 is the correct answer.

Directions: Study the following information carefully and answer the given question.

To compare the rainfall data, India Meteorological Department (IMD) calculated the Long Period Average (LPA) of rainfall during period June-August for each of the 16 states. The figure given below shows the actual rainfall (measured in mm) during June-August 2019 and the percentage deviations from LPA of respective states in 2018. Each state along with its actual rainfall is presented in the figure.



Question: The LPA of a state for a year is defined as the average rainfall in the preceding 10 years considering the period of June-August. For example, LPA in 2018 is the average rainfall during 2009-2018 and LPA in 2019 is the average rainfall during 2010-2019. It is also observed that the actual rainfall in Gujarat in 2019 is 20% more than the rainfall in 2009. The LPA of Gujarat in 2019 is closest to

option 1. 525 mm

option 2. 475 mm

option3. 505 mm

option 4. 490 mm

Correct Answer: 4

Explanation: The actual rainfall in Gujarat in 2019 is 20% more than the rainfall in 2009.

So, if actual rainfall in 2009 = x mm, then actual rainfall in 2019 = 1.2x mm

Actual rainfall in 2019 = 600 mm

Then, actual rainfall in 2009 = 600/1.2 = 500 mm

As deviation is +25%, average during 2009-2018 = 600/1.25 = 480

LPA 2019 = (480 × 10 - 500 + 600)/10 = 490 mm

Therefore, option 4 is the correct answer.

Question: If (2n + 1) + (2n + 3) + (2n + 5) + ... + (2n + 47) = 5280, then what is the value of 1 + 2 + 3 + ... + n?

Answer : 4851(2n + 1) + (2n + 3) + (2n + 5) + ... + (2n + 47) = 5280

48n + (1 + 3 + 5 + ... + 47) = 5789

48n + 24^2 = 5789

48n = 4704

n = 98

Hence, 1 + 2 + 3 + ... + n = $\frac{n(n+1)}{2} = \frac{98 \times 99}{2} = 4851$

Correct Answer: 4851

Explanation: (2n + 1) + (2n + 3) + (2n + 5) + ... + (2n + 47) = 5280

48n + (1 + 3 + 5 + ... + 47) = 5789

48n + 24^2 = 5789

48n = 4704

n = 98

Hence, 1 + 2 + 3 + ... + n = $\frac{n(n+1)}{2} = \frac{98 \times 99}{2} = 4851$

Question: In 2010, a library contained a total of 11,500 books in two categories - fiction and non-fiction. In 2015, the library contained a total of 12,760 books in these two categories. During this period, there was 10% increase in the fiction category, while there was 12% increase in the non-fiction category. How many fiction books were there in the library in 2015?

option1. 6600

option 2. 6160

option 3. 5500

option4. 6000

Correct Answer: 1

Explanation: Let the numbers of fiction and non-fiction books in 2010 be x and y, respectively.

From the first condition:

$x + y = 11,500$ ... (1)

From the second condition:

$1.1 \times x + 1.2 \times y = 12,760$ ... (2)

Solving both the equations, we get $x = 6000$.

In 2015, number of fiction books = $1.1x = 6600$

Therefore, option 1 is the correct answer.

Question: Let ABC be a right-angled triangle with hypotenuse BC of length 20 cm. If AP is perpendicular to BC, then the maximum possible length of AP, in cm, is

option 1. 8 $\sqrt{2}$

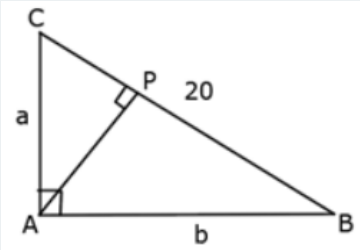
option2. 6 $\sqrt{2}$

option 3. 5

option 4. 10

Correct Answer: 4

Explanation: Refer to the figure:



For this right-angles triangle, we have the following relations:

$a^2 + b^2 = 20^2 = 400$

Maximum possible value of AP is when a = b.

That means,

$a^2 + a^2 = 20^2$

$a = 10\sqrt{2} = b$

From triangle property (Area):

$20 \times AP = ab$

$$AP = \frac{10\sqrt{2} \times 10\sqrt{2}}{20} = \frac{200}{20} = 10$$

AP = 10 cm

Therefore, option 4 is the correct answer.

Question: The strength of a salt solution is p% if 100 ml of the solution contains p grams of salt. Each of three vessels A, B and C contains 500 ml of salt solution of strengths 10%, 22% and 32%, respectively. Now, 100 ml of the solution in vessel A is transferred to vessel B. Then, 100 ml of the solution in vessel B is transferred to vessel C. Finally, 100 ml of the solution in vessel C is transferred to vessel A. The strength, in percentage, of the resulting solution in vessel A is

option 1. 13

option 2. 14

option 3. 12

option 4. 15

Correct Answer: 2

Explanation: Initial amount of salt in vessel A = 10% of 500 = 50 gm

Initial amount of salt in vessel B = 22% of 500 = 110 gm

Initial amount of salt in vessel C = 32% of 500 = 160 gm

When 100 ml is transferred from A to B, amount of salt now in B = 10 + 110 = 120 gm in 600 ml :: 20% strength

Also, amount of salt left in A = 50 - 10 = 40 gm in 400 ml :: 10 strength

Now, when 100 ml is transferred from B to C, amount of salt now in C = 20 + 160 = 180 gm in 600 ml :: 30% strength

Finally, when 100 ml is transferred from C to A, amount of salt now in A = 30 + 40 = 70 gm in 500 ml

Therefore, strength of salt in A = $\frac{70}{500}$ × 100 = 14%

Therefore, option 2 is the correct answer.

Question: The number of common terms in the two sequences: 15, 19, 23, 27, ..., 415 and 14, 19, 24, 29, ..., 464 is

option1. 18

option 2. 21

option 3. 20

option 4. 19

Correct Answer: 3

Explanation: Both the sequences are in arithmetic progression.

Common difference (d_1) for the first sequence = 4

Common difference (d_2) for the second sequence = 5

The first common term is 19.

The common terms will also be in arithmetic progression with common difference:

LCM(d_1, d_2) = LCM(4, 5) = 20

Let there be 'n' terms in this sequence; then the last term would be ≤ 415.

That is,

$a + (n - 1)d \leq 415$

$\Rightarrow 19 + (n - 1) \times 20 \leq 415$

$\Rightarrow (n - 1) \times 20 \leq 415 - 19$

$\Rightarrow (n - 1) \times 20 \leq 396$

$\Rightarrow (n - 1) = \left[\frac{396}{20}\right]$, where [ ] is the greatest integer.

$\Rightarrow (n - 1) = 19$

$\Rightarrow n = 20$

Therefore, option 3 is the correct answer.

Question: Amal invests Rs. 12,000 at 8% interest, compounded annually, and Rs. 10,000 at 6% interest, compounded semi-annually, both investments being for one year. Bimal invests his money at 7.5% simple interest for one year. If Amal and Bimal get the same amount of interest, then the amount, in rupees, invested by Bimal is

Answer : 20920Let the amount invested by Bimal be Rs. P.

As given, the interest incomes for both are equal.

Therefore, according to the question:

$$\left[\frac{12,000 \times 8 \times 1}{100}\right] + \left[10,000\left(1+\frac{3}{100}\right)^2 - 10,000\right] = \left[\frac{P \times 7.5 \times 1}{100}\right]$$

$$960 + [10,609 - 10,000] \times 100 = 7.5P$$
$$1,56,900 = 7.5P$$
$$P = 20,920$$

The amount invested by Bimal is Rs. 20,920.

Correct Answer: 20920

Explanation: Let the amount invested by Bimal be Rs. P.

As given, the interest incomes for both are equal.

Therefore, according to the question:

$$\left[\frac{12,000 \times 8 \times 1}{100}\right] + \left[10,000\left(1+\frac{3}{100}\right)^2 - 10,000\right] = \left[\frac{P \times 7.5 \times 1}{100}\right]$$

$$960 + [10,609 - 10,000] \times 100 = 7.5P$$
$$1,56,900 = 7.5P$$
$$P = 20,920$$

The amount invested by Bimal is Rs. 20,920.

Question: The real root of the equation $2^{6x} + 2^{3x+2} - 21 = 0$ is

option 1. $\log_2 27$

option 2. $\frac{\log_2 3}{3}$

option 3. $\log_2 9$

option 4. $\frac{\log_2 7}{3}$

Correct Answer: 2

Explanation: $2^{6x} + 2^{3x} \times 2^2 - 21 = 0$

Take $2^{3x} = y$.

$\Rightarrow y^2 + 4y - 21 = 0$

$\Rightarrow (y - 3)(y + 7) = 0$

$\Rightarrow y = 3$ or $y = -7$

$\Rightarrow 2^{3x} = 3$ or $2^{3x} = -7$ {No solution}

$\Rightarrow 3x = \log_2 3$

$\Rightarrow x = \frac{log_2 3}{3}$

Question: John jogs on track A at 6 kmph and Mary jogs on track B at 7.5 kmph. The total length of tracks A and B is 325 metres. While John makes 9 rounds of track A, Mary makes 5 rounds of track B. In how many seconds will Mary make one round of track A? key in the integer.

Answer : 48Speed of John = 6 kmph = 6 × $\frac{5}{18}$ = $\frac{5}{3}$ m/s

Speed of Mary = 7.5 kmph = 7.5 × $\frac{5}{18}$ = $\frac{25}{12}$ m/s

Let the track lengths of A and B be x and y, respectively.

Given, x + y = 325 … (1)

Time taken by John to cover one round of A = $\frac{x}{5/3}$ s

Therefore, time taken to cover 9 rounds = 9 × $\frac{x}{5/3}$ = $\frac{27}{5}$ x s

Time taken by Mary to cover one round of B = $\frac{y}{25/12}$ sec

Therefore, time taken to cover 5 rounds = 5 × $\frac{y}{25/12}$ = $\frac{12}{5}$ y s

As per the condition:

$$\frac{27}{5}x = \frac{12}{5}y$$

$$\Rightarrow \frac{x}{y} = \frac{12}{27} = \frac{4}{9}$$

Putting in equation (1), we get x = 100 and y = 225.

Time taken by Mary to cover one round of A = $\frac{100}{25/12}$ = 48 s

Correct Answer: 48

Explanation: Speed of John = 6 kmph = 6 × $\frac{5}{18}$ = $\frac{5}{3}$ m/s

Speed of Mary = 7.5 kmph = 7.5 × $\frac{5}{18}$ = $\frac{25}{12}$ m/s

Let the track lengths of A and B be x and y, respectively.

Given, x + y = 325 … (1)

Time taken by John to cover one round of A = $\frac{x}{5/3}$ s

Therefore, time taken to cover 9 rounds = 9 × $\frac{x}{5/3}$ = $\frac{27}{5}$ x s

Time taken by Mary to cover one round of B = $\frac{y}{25/12}$ sec

Therefore, time taken to cover 5 rounds = 5 × $\frac{y}{25/12}$ = $\frac{12}{5}$ y s

As per the condition:

$$\frac{27}{5}x = \frac{12}{5}y$$

$$\Rightarrow \frac{x}{y} = \frac{12}{27} = \frac{4}{9}$$

Putting in equation (1), we get x = 100 and y = 225.

Time taken by Mary to cover one round of A = $\frac{100}{25/12}$ = 48 s

Question: What is the largest positive integer n such that $\frac{n^2+7n+12}{n^2-n-12}$ is also a positive integer?

option 1. 12

option 2. 8

option 3. 6

option 4. 16

Correct Answer: 1

Explanation: $\frac{n^2+7n+12}{n^2-n-12} = \frac{(n+3)(n+4)}{(n-4)(n+3)} = \frac{(n+4)}{(n-4)}$

$\Rightarrow \frac{(n+4)}{(n-4)} = \frac{(n-4+8)}{(n-4)} = 1 + \frac{8}{(n-4)}$

The expression is positive integer if $\frac{8}{(n-4)}$ is also a positive integer.

Or (n - 4) must be factor of 8.

For n to be largest, n - 4 = 8

Or n = 12

Question: Let A be a real number. Then the roots of the equation $x^2 - 4x - \log_2 A = 0$ are real and distinct if and only if

option 1. A < 1/8

option 2. A < 1/16

option 3. A > 1/16

option 4. A > 1/8

Correct Answer: 3

Explanation: For quadratic equation $ax^2 + bx + c = 0$, the roots are real and distinct if $b^2 - 4ac > 0$

Given, $x^2 - 4x - \log_2 A = 0$

$(-4)^2 - 4 \times 1 \times (-\log_2 A) > 0$

$\log_2 A > -4$

$A > 2^{-4}$

$$A > \frac{1}{16}$$

Therefore, option 3 is the correct answer.

Question: In a triangle ABC, medians AD and BE are perpendicular to each other, and have lengths 12 cm and 9 cm, respectively. Then the area of triangle ABC, in sq cm, is

option 1. 68

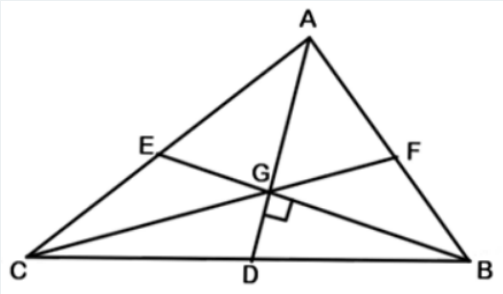
option 2. 78

option 3. 80

option 4. 72

Correct Answer: 4

Explanation: Refer to the figure below:



Draw the third median CF. We know the following facts:

1. The intersection point of medians, i.e. centroid (G) divides each median into 2 : 1.

2. All three medians divide the triangle into 6 parts of equal area.

$GD = \frac{1}{3} \times AD = \frac{1}{3} \times 12 = 4$

$GB = \frac{2}{3} \times BE = \frac{2}{3} \times 9 = 6$

Area of triangle $BGD = \frac{1}{2} \times GB \times GD = \frac{1}{2} \times 6 \times 4 = 12$

Hence, area of triangle ABC = 6 × 12 = 72

Therefore, option 4 is the correct answer.

Question: In an examination, the score of A was 10% less than that of B, the score of B was 25% more than that of C, and the score of C was 20% less than that of D. If A scored 72, then the score of D was

Answer : 80Given, A = 72

Also, A = 0.9 × B ⇒ B = A/0.9 = 72/0.9 = 80

B = 1.25 × C ⇒ C = B/1.25 = 80/1.25 = 64

C = 0.8 × D ⇒ D = C/0.8 = 64/0.8 = 80

Correct Answer: 80

Explanation: Given, A = 72

Also, A = 0.9 × B ⇒ B = A/0.9 = 72/0.9 = 80

B = 1.25 × C ⇒ C = B/1.25 = 80/1.25 = 64

C = 0.8 × D ⇒ D = C/0.8 = 64/0.8 = 80

Question: How many pairs (m,n) of positive integers satisfy the equation $m^2 + 105 = n^2$? key in the integer.

Answer : 4Given

$m^2 + 105 = n^2$

$n^2 - m^2 = 105$

$(n - m)(n + m) = 105$

105 can be written as $105 \times 1 = 21 \times 5 = 15 \times 7 = 35 \times 3$.

So, only 4 cases are possible to get values of n, m as positive.

Thus, number of solution = 4.

Correct Answer: 4

Explanation: Given

$m^2 + 105 = n^2$

$n^2 - m^2 = 105$

$(n - m)(n + m) = 105$

105 can be written as $105 \times 1 = 21 \times 5 = 15 \times 7 = 35 \times 3$.

So, only 4 cases are possible to get values of n, m as positive.

Thus, number of solution = 4.

Question: In a six digit number, the sixth, that is, the rightmost, digit is the sum of the first three digits, the fifth digit is the sum of first two digits, the third digit is equal to the first digit, the second digit is twice the first digit and the fourth digit is the sum of fifth and sixth digits. Then, the largest possible value of the fourth digit is

Answer : 7Let the number be ABCDEF, where A, B, C, D, E, and F be the digits.

Given,

C = A

B = 2A

F = A + B + C = A + 2A + A = 4A

E = A + B = A + 2A = 3A

D = E + F = 3A + 4A = 7A

Since A and D both are digit, the maximum possible value of A is 1.

Therefore, the maximum value of D is 7.

Correct Answer: 7

Explanation: Let the number be ABCDEF, where A, B, C, D, E, and F be the digits.

Given,

C = A

B = 2A

F = A + B + C = A + 2A + A = 4A

E = A + B = A + 2A = 3A

D = E + F = 3A + 4A = 7A

Since A and D both are digit, the maximum possible value of A is 1.

Therefore, the maximum value of D is 7.

Question: Mukesh purchased 10 bicycles in 2017, all at the same price. He sold six of these at a profit of 25% and the remaining four at a loss of 25%. If he made a total profit of Rs. 2000, then his purchase price of a bicycle, in rupees, was

option 1. 2000

option2. 8000

option 3. 6000

option 4. 4000

Correct Answer: 4

Explanation: Let the cost of each bicycle be Rs. x.

From the given condition:

$10x + 2000 = 6 \times 1.25x + 4 \times 0.75x$

$0.5x = 2000$

$x = 4000$

Therefore, option 4 is the correct answer.

Question: In an examination, Rama's score was one-twelfth of the sum of the scores of Mohan and Anjali. After a review, the score of each of them increased by 6. The revised scores of Anjali, Mohan, and Rama were in the ratio 11 : 10 : 3. Then Anjali's score exceeded Rama's score by

option 1. 26

option2. 24

option 3. 35

option 4. 32

Correct Answer: 4

Explanation: Let the scores of Anjali, Mohan, and Rama after review be 11x, 10x, and 3x, respectively.

Therefore, the scores of Anjali, Mohan, and Rama before review was (11x - 6), (10x - 6) and (3x - 6), respectively.

Given, Rama's score was one-twelfth of the sum of the scores of Mohan and Anjali.

$\Rightarrow (3x - 6) = \frac{1}{12}[(11x - 6) + (10x - 6)]$

$\Rightarrow 12(3x - 6) = 21x - 12$

$\Rightarrow 36x - 72 = 21x - 12$

$\Rightarrow 36x - 21x = 72 - 12 = 60$

$\Rightarrow x = 4$

Now, Anjali's score – Rama's score = (11x - 6) - (3x - 6) = 8x = 32

Therefore, option 4 is the correct answer.

Question: Anil alone can do a job in 20 days while Sunil alone can do it in 40 days. Anil starts the job and after 3 days, Sunil joins him. Again, after a few more days, Bimal joins them and they together finish the job. If Bimal has done 10% of the job, then in how many days was the job done?

option 1. 14

option 2. 15

option 3. 13

option 4. 12

Correct Answer: 3

Explanation: Let the work be of 40 units.

Amount of work done by Anil in one day = 40/20 = 2 units

Amount of work done by Sunil in one day = 20/20 = 1 units

Bimal does 10% work, i.e. 4 units.

Rest 40 - 4 = 36 units is done by Anil and Sunil.

Let Anil took x days. Therefore, Sunil took (x - 3) days.

Therefore,

2x + 1(x - 3) = 36

3x = 39

x = 13

Therefore, total 13 days are required to complete the job.

Question: A cyclist leaves A at 10 am and reaches B at 11 am. Starting from 10:01 am, every minute a motor cycle leaves A and moves towards B. Forty-five such motor cycles reach B by 11 am. All motor cycles have the same speed. If the cyclist had doubled his speed, how many motor cycles would have reached B by the time the cyclist reached B?

option 1. 20

option 2. 15

option3. 23

option 4. 22

Correct Answer: 2

Explanation: Let speed of motor cycles be m and that of cyclist be c.

Since there are 45 motorcycles reaching in 1 hour, so the latest motorcycle must start by 10:15 from A.

Now, cyclist doubles its speed, so it reaches B at 10:30, so maximum motorcycles that can start are from 10:01 to 10:15,

Therefore, 15 is the correct answer.

Question: If x is a real number, then $\sqrt{\log_e \frac{4x - x^2}{3}}$ is a real number if and only if

option1. $1 \leq x \leq 2$

option 2. $-3 \leq x \leq 3$

option 3. $1 \leq x \leq 3$

option 4. $-1 \leq x \leq 3$

Correct Answer: 3

Explanation: The expression will be real, if and only if $\log_e \frac{4x - x^2}{3} \geq 0$

$$\log_e \frac{4x - x^2}{3} \geq \log_e e^0$$

$$\frac{4x - x^2}{3} \geq 1$$
$$x^2 - 4x + 3 \leq 0$$
$$(x - 1)(x - 3) \leq 0$$
$$1 \leq x \leq 3$$

Therefore, option 3 is the correct answer.

Question: If $5^x - 3^y = 13438$ and $5^{x-1} + 3^{y+1} = 9686$, then x + y equals

Answer : 13Given : $5^x - 3^y = 13438$ .....(1)

and $5^{x-1} + 3^{y+1} = 9686 \Rightarrow 5^x/5 + 3.3^y = 9686$ .....(2)

Multiplying equation 1 by 3 and adding, we get

$\Rightarrow 5^x = 15625$

$\Rightarrow 5^x = 5^6$

So, x = 6

Putting x in equation 1, we get

$\Rightarrow 3^y = 2187$

$\Rightarrow 3^y = 3^7$

So, y = 7

So, x + y = 7 + 6 = 13

∴ The value of x + y is 13.

Correct Answer: 13

Explanation: Given : $5^x - 3^y = 13438$ .....(1)

and $5^{x-1} + 3^{y+1} = 9686 \Rightarrow 5^x/5 + 3.3^y = 9686$ .....(2)

Multiplying equation 1 by 3 and adding, we get

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$\Rightarrow 5^x = 5^6$

So, x = 6

Putting x in equation 1, we get

$\Rightarrow 3^y = 2187$

$\Rightarrow 3^y = 3^7$

So, y = 7

So, x + y = 7 + 6 = 13

∴ The value of x + y is 13.

Question: Two ants A and B start from a point P on a circle at the same time, with A moving clock-wise and B moving anti-clockwise. They meet for the first time at 10:00 am when A has covered 60% of the track. If A returns to P at 10:12 am, then B returns to P at

option1. 10:45 am

option 2. 10:25 am

option 3. 10:27 am

option 4. 10:18 am

Correct Answer: 3

Explanation: 40% of total distance covered by A in 12 minutes.

So, it takes to cover 60% of total distance in 18 minutes.

As, speed of A is 1.5 of speed of B.

So, B takes to cover 60% of the distance = 18 × 1.5 = 27 minutes

Therefore, ant B reaches P at 10:27 am.

Question: The quadratic equation $x^2 + bx + c = 0$ has two roots 4a and 3a, where a is an integer. Which of the following is a possible value of $b^2 + c$?

option 1. 3721

option 2. 427

option 3. 549

option 4. 361

Correct Answer: 3

Explanation: Sum of roots = 4a + 3a = 7a = -b

Or b = -7a

Product of roots = 4a × 3a = c

Or $c = 12a^2$

Now, $b^2 + c = (-7a)^2 + 12a^2 = 61a^2$

Comparing the options,

Option 1: $61a^2 = 3721 \Rightarrow a^2 = 61$, clearly a is not an integer.

Option 2: $61a^2 = 427 \Rightarrow a^2 = 7$, clearly a is not an integer.

Option 3: $61a^2 = 549 \Rightarrow a^2 = 9$, we can have a = -3 or 3 (an integer).

Option 4: $61a^2 = 361 \Rightarrow a^2 = \frac{361}{61}$, clearly a is not an integer.

Therefore, option 3 is the correct answer.

Question: Let a, b, x, y be real numbers such that $a^2 + b^2 = 25$, $x^2 + y^2 = 169$, and $ax + by = 65$. If $k = ay - bx$, then

option 1. $K > \frac{5}{13}$

option 2. $k = 0$

option 3. $0 < k \leq \frac{5}{13}$

option 4. $k = \frac{5}{13}$

Correct Answer: 2

Explanation: As a, b, x , y are real numbers.

And, we know $3^2 + 4^2 = 25$ or $5^2 + 0 = 25$

Also $13^2 + 0 = 169$ or $5^2 + 12^2 = 169$

ax + by = 65 is possible only when (a, b) = (0, 5) and (x, y) = (0, 13)

Thus $k = 0 \times 13 – 0 \times 5 = 0$

Therefore, option 2 is the correct answer.

Question: Two circles, each of radius 4 cm, touch externally. Each of these two circles is touched externally by a third circle. If these three circles have a common tangent, then the radius of the third circle, in cm, is

option 1. $\sqrt{2}$

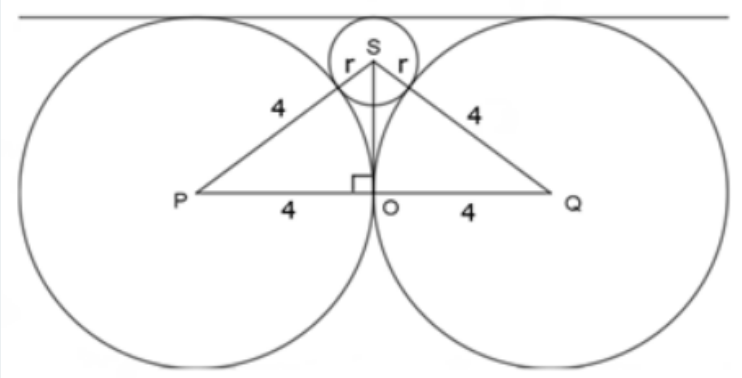
option 2. $\frac{\pi}{3}$

option 3. $\frac{1}{\sqrt{2}}$

option 4. 1

Correct Answer: 4

Explanation: From the given information, the figure is given as below:



SO = 4 - r

Applying Pythagoras theorem in triangle POS, we get;

$PS^2 = PO^2 + SO^2$

$(4 + r)^2 = 4^2 + (4 - r)^2$

$\Rightarrow (4 + r)^2 - (4 - r)^2 = 16$

$\Rightarrow 4 \times 4 \times r = 16$

$\Rightarrow r = 1$

Therefore, option 4 is the correct answer.

Question: John gets Rs. 57 per hour of regular work and Rs. 114 per hour of overtime work. He works altogether 172 hours and his income from overtime hours is 15% of his income from regular hours. Then, for how many hours did he work overtime?

Answer : 12Let the number of hours for regular and overtime work be x and y, respectively.

We have two equations:

x + y = 172 ... (1)

114y = 0.15 × 57x

2y = 0.15x

y = 0.075x

From (1):

1.075x = 172

x = 160

Then, y = 12

Hence, his overtime work = 12 hours

Correct Answer: 12

Explanation: Let the number of hours for regular and overtime work be x and y, respectively.

We have two equations:

x + y = 172 ... (1)

114y = 0.15 × 57x

2y = 0.15x

y = 0.075x

From (1):

1.075x = 172

x = 160

Then, y = 12

Hence, his overtime work = 12 hours

Question: The average of 30 integers is 5. Among these 30 integers, there are exactly 20 which do not exceed 5. What is the highest possible value of the average of these 20 integers?

option 1. 4

option 2. 5

option 3. 3.5

option 4. 4.5

Correct Answer: 4

Explanation: Let a be the average of 20 numbers whose average does not exceed 5.

Let b be the average of rest of the 10 numbers. Clearly, b > 5, i.e. the average of these numbers exceeds 5.

Therefore,

30 × 5 = 20a + 10b

⇒ 2a + b = 15

⇒ b = 15 - 2a

For highest value of a, the value of b should be minimum.

As, b = 6, when all 10 number is 6.

6 = 15 - 2a

a = 4.5

Therefore, option 4 is the correct answer.

Question: The salaries of Ramesh, Ganesh and Rajesh were in the ratio 6 : 5 : 7 in 2010, and in the ratio 3 : 4 : 3 in 2015. If Ramesh's salary increased by 25% during 2010-2015, then the percentage increase in Rajesh's salary during this period is closest to

option 1. 8

option2. 10

option 3. 7

option 4. 9

Correct Answer: 3

Explanation: Let their salaries in 2010 be 6x, 5x and 7x, respectively.

Also, let their salaries in 2015 be 3y, 4y and 3y, respectively

Given, 3y = 1.25 × 6x

Or y = 2.5x.

Therefore, salary of Rajesh in 2015 = 3y = 3 × 2.5x = 7.5x

Percentage increase = $\left(\frac{7.5x - 7x}{7x}\right)$ × 100 = 7.14 ≈ 7

Therefore, option 3 is the correct answer.

Question: How many factors of $2^4 \times 3^5 \times 10^4$ are perfect squares which are greater than 1? key in the integer.

Answer : 442$4 \times 3^5 \times 10^4 = 2^8 \times 3^5 \times 5^4$

For perfect squares, we have to take only even powers of the prime factors of the number.

The number of ways 2's can be used is 5, i.e. 2^0, 2^2, 2^4, 2^6, 2^8.

The number of ways 3's can be used is 3, i.e. 3^0, 3^2, 3^4.

The number of ways 5's can be used is 3, i.e. 5^0, 5^2, 5^4.

Therefore, the total number of factors which are perfect squares = 5 × 3 × 3 = 45

But this also includes the number 1. Hence excluding 1, the required number is 45 - 1 = 44.

Correct Answer: 44

Explanation: $2^4 \times 3^5 \times 10^4 = 2^8 \times 3^5 \times 5^4$

For perfect squares, we have to take only even powers of the prime factors of the number.

The number of ways 2's can be used is 5, i.e. 2^0, 2^2, 2^4, 2^6, 2^8.

The number of ways 3's can be used is 3, i.e. 3^0, 3^2, 3^4.

The number of ways 5's can be used is 3, i.e. 5^0, 5^2, 5^4.

Therefore, the total number of factors which are perfect squares = 5 × 3 × 3 = 45

But this also includes the number 1. Hence excluding 1, the required number is 45 - 1 = 44.

Question: Let $a_1, a_2, ...$ be integers such that

$a_1 - a_2 + a_3 - a_4 + ... + (-1)^{n-1} a_n = n$, for all $n \geq 1$.

Then $a_{51} + a_{52} + ... + a_{1023}$ equals

option 1. 1

option 2. 10

option 3. 0

option 4. -1

Correct Answer: 1

Explanation:

$$\begin{aligned}&\text{For } n = 1, a_1 = 1\\&\text{For } n = 2, a_1 - a_2 = 2 \Rightarrow a_2 = -1\\&\text{For } n = 3, a_1 - a_2 + a_3 = 3 \Rightarrow a_3 = 1\\&\text{For } n = 4, a_1 - a_2 + a_3 - a_4 = 4 \Rightarrow a_4 = -1\end{aligned}$$

From the pattern,

each odd term = 1

and each even term = -1

$$\begin{aligned}&a_{51} + a_{52} + ... + a_{1022} + 1023\\&= 1 - 1 + 1 - 1 + 1 - 1 + 1 - 1 + ... - 1 + 1\\&= 1\end{aligned}$$

Question: The base of a regular pyramid is a square and each of the other four sides is an equilateral triangle, length of each side being 20 cm. The vertical height of the pyramid, in cm, is

option 1. $10\sqrt{2}$

option 2. $5\sqrt{5}$

option 3. $8\sqrt{3}$

option 4. 12

Correct Answer: 1

Explanation: As we know that the square pyramid of edge length 'a' has vertical height (If they make equilateral triangle) h = $\frac{a}{\sqrt{2}}$.

Vertical height = $\frac{20}{\sqrt{2}} = 10\sqrt{2}$

Therefore, option 1 is the correct answer.

Question: A man makes complete use of 405 cc of iron, 783 cc of aluminium, and 351 cc of copper to make a number of solid right circular cylinders of each type of metal. These cylinders have the same volume and each of these have radius 3 cm. If the total number of cylinders is to be kept at a minimum, then the total surface area of all these cylinders, in sq cm, is

option 1. 8464 π

option 2. 928 π

option 3. 1026(1 + π)

option 4. 1044(4 + π)

Correct Answer: 3

Explanation: To get the minimum number of cylinders, the volume of each of the cylinder must be HCF of 405,783, and 351.

⇒ HCF (405, 783, 351) = 27

Therefore, number of cylinders of iron = $\frac{405}{27}$ = 15

and, number of cylinders of aluminum = $\frac{783}{27}$ = 29

and, number of cylinders of copper = $\frac{351}{27}$ = 13

Hence, the total number of a cylinders = 15 + 29 + 13 = 57

Also, volume of each cylinder = 27 cc

⇒ $\pi r^2 h = 27$

⇒ $\pi 3^2 h = 27$

⇒ $h = \frac{3}{\pi}$

And total surface area of each cylinder = $2\pi r(r+h)$

= $2\pi \times 3 \times (3+\frac{3}{\pi}) = 18(\pi+1)$

Hence, total surface area of 57 cylinders = $57 \times 18(\pi+1)$

= $1026(\pi+1)$

Therefore, option 3 is the correct answer.

Question: A shopkeeper sells two tables, each procured at cost price p, to Amal and Asim at a profit of 20% and at a loss of 20%, respectively. Amal sells his table to Bimal at a profit of 30%, while Asim sells his table to Barun at a loss of 30%. If the amounts paid by Bimal and Barun are x and y, respectively, then (x - y)/p equals

option 1. 1.2

option 2. 1

option 3. 0.7

option 4. 0.50

Correct Answer: 2

Explanation: Cost of table for Aman = 1.2p

Cost of table for Asim = 0.8p

Aman sells to Bimal at 1.3 × 1.2p = 1.56p

Cost of table for Bimal = x = 1.56p

Asim sells table to Barun at 0.7 × 0.8p = 0.56p

Cost of table for Barun = y = 0.56p

Therefore, $\frac{x-y}{p} = \frac{1.56p-0.56p}{p} = 1$

Therefore, option 2 is the correct answer.

Question: Let f be a function such that f(mn) = f(m) f(n) for every positive integers m and n. If f(1), f(2) and f(3) are positive integers, f(1) < f (2), and f(24) = 54, then f(18) equals

Answer : 12Given, f(mn) = f(m) f(m)

Also, f(24) = 54

⇒ f(24) = 2 × 3 × 3 × 3

⇒ f(2 × 12) = f(2) f(12) = f(2) f(2 × 6) = f(2) f(2) f(6) = f(2) f(2) f(2 × 3) = f(2) f(2) f(2) f(3) = 2 × 3 × 3 × 3

Given that f(1), f(2) and f(3) are all positive integers.

By comparison, we get;

f(2) = 3 and f(3) = 2.

And we can safely take f(1) = 1

Now, f(18) = f(2)(9) = f(2) f(3 × 3) = f(2) f(3) f(3) = 3 × 2 × 2 = 12

Correct Answer: 12

Explanation: Given, f(mn) = f(m) f(m)

Also, f(24) = 54

⇒ f(24) = 2 × 3 × 3 × 3

⇒ f(2 × 12) = f(2) f(12) = f(2) f(2 × 6) = f(2) f(2) f(6) = f(2) f(2) f(2 × 3) = f(2) f(2) f(2) f(3) = 2 × 3 × 3 × 3

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And we can safely take f(1) = 1

Now, f(18) = f(2)(9) = f(2) f(3 × 3) = f(2) f(3) f(3) = 3 × 2 × 2 = 12

Question: Let A and B be two regular polygons having a and b sides, respectively. It b = 2a and each interior angle of B is 3/2 times each interior angle of A, then each interior angle, in degrees, of a regular polygon with a + b sides is ___. (Key in the integer)

Answer : 150Each interior angle of n sided polygon = $\frac{(n-2)\times 180}{n}$

$$\frac{(b-2)\times 180}{b}=\frac{3}{2}\times\frac{(a-2)\times 180}{a}$$

Also, b = 2a

Then,

2a - 2 = 3a - 6

a = 4 and b = 8

a + b = 12

Each interior angle of 12 sided polygon = $\frac{(12-2)\times 180}{12}=150^{\circ}$

Therefore, the answer is 150.

Correct Answer: 150

Explanation: Each interior angle of n sided polygon = $\frac{(n-2)\times 180}{n}$

$$\frac{(b-2)\times 180}{b}=\frac{3}{2}\times\frac{(a-2)\times 180}{a}$$

Also, b = 2a

Then,

2a - 2 = 3a - 6

a = 4 and b = 8

a + b = 12

Each interior angle of 12 sided polygon = $\frac{(12-2)\times 180}{12}=150^{\circ}$

Therefore, the answer is 150.