

# Prep Test for the Midterm

The midterm will take a similar form to this prep test. You have one hour to finish this test.

## Part 1. Definitions and Assumptions

Fill the blanks, or say whether the given claim is true or false, or answer the given question.

- a. Arguments that are relatively strong or weak are called \_\_\_\_\_ arguments.  $\Rightarrow$  inductive.  
Explanation: We can classify arguments into two groups, inductive and deductive ones. The premises of a deductive argument are intended to support the conclusion to the highest possible degree; for, when a deductive argument is successful (i.e., valid), the premises of such an argument cannot be false while the premises are true. Hence, when we evaluate an argument as a deductive one, we consider it to be valid or invalid, period. By contrast, an inductive argument is usually deductively invalid, but its premises somehow support the conclusion. For example, if you have observed three hundred swans and they were all white, then your observations, to some extent, support the general hypothesis "All swans are white"; furthermore, if you observe one thousand swans and they were all white, it provides a stronger support for that hypothesis.
- b. If a valid argument has a false conclusion, then not all its premises can be true. (True or False.) \_\_\_\_\_  $\Rightarrow$  True  
Explanation: A valid argument is such that it is logically impossible that its premises are all true but the conclusion is false; equivalently, a valid argument is such that necessarily, if the premises are true, the conclusion is also true.
- c. If you try to demonstrate a conclusion, you are using \_\_\_\_\_ reasoning.  $\Rightarrow$  deductive.  
Explanation: Check the explanation for (a).
- d. An argument can never have an unstated conclusion. (True or False.) \_\_\_\_\_  $\Rightarrow$  False.  
Example: "Cheolsoo's girlfriend goes to Yonsei university. And every student of that university is very smart." Although not explicitly stated, the hidden conclusion is clearly "Cheolsoo's girlfriend is very smart."
- e. "If... then..." sentences may be arguments. (True or False) \_\_\_\_\_  $\Rightarrow$  False. See p. 47 of the textbook for an explanation.
- f. "A because B" is always an argument. (True or False) \_\_\_\_\_  $\Rightarrow$  False. Explanation: Ex1) "Younghee is hungry now because she did n't have the breakfast this morning." Ex2) "Younghee must've been hungry because she ate the cake so fast."  
Ex1 is an explanation, but Ex2 is an argument. See pp. 47-48.

- g. If a sentence has the form of “A if B,” then A is its \_\_\_\_\_ and B is its \_\_\_\_\_. ⇒  
“consequent,” “antecedent.”
- h. If a sentence has the form of “A only if B, then A is its \_\_\_\_\_ and B is its \_\_\_\_\_.
- i. Which of 1)-4) is equivalent to “If A then B”?
- 1) B if A.
  - 2) A only if B.
  - 3) Unless B, not A.
  - 4) If not B, then not A. (More than one answer can be correct.)
- ⇒ All of 1)-4) are equivalent to “A only if B.”
- j. If you make a certain claim but somebody says to you “It is just your opinion,” how will you reply?
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- ⇒ “I defended my opinion with a good argument, Thus, it is not just an opinion; for, the conclusion of a good argument is likely to be true.”
- k. If you make a certain claim but somebody says to you “It is your *subjective* opinion,” how will can you reply?
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- ⇒ “Even if somebody’s opinion is subjective, it does not mean that it is false or that it is unimportant. It might be a subjective opinion that the new album of Girls’ Generation is cool, but it might be true. Further, it will be important to anybody in music industry.”

## Part 2. Short Passages

For each of passages (a)-(f), please answer questions (1)-(4) below.

1. Which sentence is the conclusion, and which ones are premises? (Please circle any premise/conclusion markers.)
  2. Does this argument have any hidden premises/conclusion? (Please write any such premises/conclusion.)
  3. Is this argument (including the hidden premise/conclusion) meant to be a deductive argument or an inductive one?
  4. If this argument is meant to be deductive, then is it valid or invalid? Or if it is meant to be inductive, then is it strong or weak?
- a. All mammals are warm-blooded creatures, and all whales are mammals. Therefore, all whales are warm-blooded creatures. ⇒ 1) The conclusion: “All whales are warm-blooded creatures.” The first premise: “All mammals are warm-blooded creatures.” The second premise: “All whales are mammals.” 2) Clearly, this passage does not have hidden premise. In a good sense, this argument is AUTONOMOUS. 3) Clearly, it is deductively valid. Almost surely, the author intended it to be a deductive argument. 4) As already mentioned, it is deductively valid.

- b. The brains of rats raised in enriched environments with a variety of toys and puzzles weigh more than the brains of rats raised in more barren environments. Therefore, the brains of humans will weigh more if humans are placed in intellectually stimulating environments.  $\Rightarrow$  1) The conclusion: "The brains of humans will weigh more if humans are placed in intellectually stimulating environments. The premise: "The brains of rats raised in enriched environments with a variety of toys and puzzles weigh more than the brains of rats raised in more barren environments." 2) Probably, the author had the following argument in mind:

P1) The brains of rats raised in enriched environments with a variety of toys and puzzles weigh more than the brains of rats raised in more barren environments.  
P2) If P2, it is probable that the brains of humans will weigh more if humans are placed in intellectually stimulating environments.  $\Leftarrow$  The hidden premise!  
C) The brains of humans will weigh more if humans are placed in intellectually stimulating environments.

3) If we evaluate this argument as a deductive one, we cannot help but considering it to be a bad argument; for, it is clearly invalid. Thus, the author perhaps meant it to be an inductive argument. 4) The above argument's premises, P1) and P2), provide a strong support for C). In other words, this argument is inductively strong. Note: How about this argument?

P1) The brains of rats raised in enriched environments with a variety of toys and puzzles weigh more than the brains of rats raised in more barren environments.  
C) The brains of humans will weigh more if humans are placed in intellectually stimulating environments.

Clearly, this argument is invalid. Is it inductively strong? No. Admittedly, we tend to consider C) to be probable conditional on P1). However, this is because we appeal to something like P2) in judging the probability of C). Without the help of P2) (or anything like it), P1) will not support C) strongly. A tip: Consider an *invalid* argument " $A_1...A_n$ ; therefore B." How do you know that it is inductively strong? Imagine that you do not have any of your current knowledge, but that you are as smart and reasonable as you are now. Assuming that  $A_1...A_n$  are all true, would you still think that B is likely to be true? If you answer "Yes," then it indicates that the argument is inductively strong. If your answer is "No," then this suggests that the argument is inductively weak. However, be careful. A key to this thought experiment is that you should not appeal to your commonsensical knowledge. For, we are trying to know whether  $A_1...A_n$  support B *by themselves*, rather than whether  $A_1...A_n$  support B *with the help of some other premises (including your commonsensical knowledge)*.

- c. We've interviewed two hundred professional football players, and 60 percent of them favor expanding the season to twenty games. Therefore, 60 percent of all professional

football players favor expanding the season to twenty games.

⇒ 1) Identify the premises and the conclusion:

P1) We've interviewed two hundred professional football players.

P2) Sixty percent of them favor expanding the season to twenty games.

C) Sixty percent of all professional football players favor expanding the season to twenty games.

2) Seemingly, this argument has no hidden premise. Note: How about this?

P1) We've interviewed two hundred professional football players.

P2) Sixty percent of them favor expanding the season to twenty games.

P3) The percentage of those favoring the expansion of the season among the interviewed professional football players is equal to the percentage of those favoring the expansion of the season among the entire group of professional football players.

C) Sixty percent of all professional football players favor expanding the season to twenty games.

Indeed, this argument is even valid! For it is impossible that P1)-P3) are all true but C) is false. However, it is unlikely that the author had this argument in mind because P3) is very implausible. Perhaps, the intended argument was that consisting of P1), P2), & C).

3) As such, that argument is indeed inductively weak one. For assume that P1) and P2) are true. Is C) probable given this assumption? No, because the percentage of those favoring expansion among the interviewed professional football players is unlikely to be exactly the same as that of those favoring the plan among the entire group of professional football players.

- d. Michael should just go ahead and get a new car. The one he's driving is junk; also, he has a new job and can afford a new car. ⇒ 1) As explicitly stated, the argument has the following structure:

P1) The car Michael is driving is junk.

P2) He has a new job and can afford a new car.

C) He should just go ahead and get a new car.

2) The author is appealing to a hidden premise, namely, "If P1) and P2), then C." In other words, she had this argument in mind:

P1) The car Michael is driving is junk.

P2) He has a new job and can afford a new car.

P3) If P1) and P2), then Michael should just go ahead and get a new car.

C) He should just go ahead and get a new car.

Note that P3) is very plausible. When you identify a hidden premise (or make a conjecture about which premise(s) the author appeals to implicitly), you should take two factors into consideration: first, adding that premise(s) will make the argument valid or inductively strong and, second, the added premise(s) is (are) plausible. 3)&4) Probably, the author meant it to be a deductive argument because, if we evaluate it as a deductive one, then it is actually valid. Note: We should distinguish two kinds of judgment: first, the judgment about whether the given argument is deductive or inductive and second, the

judgment of the given argument's deductive validity or inductive strength. However, these two judgments are interconnected. For, it will be stupid to regard a passage as containing a deductive argument when it is deductively invalid; similarly, it will not be a smart thing to consider a passage to include an inductive argument when it is indeed deductively valid.

- e. If Karper goes to Las Vegas, he'll wind up in a casino; and if he winds up in a casino, it's a sure thing he'll spend half the night at a craps table. So you can be sure: If Karper goes to Las Vegas, he'll spend half the night at a craps table.  $\Rightarrow$  1) This argument has this structure:
  - P1) If Karper goes to Las Vegas, he'll wind up in a casino.
  - P2) If he winds up in a casino, he'll spend half the night at a craps table.
  - C) If Karper goes to Las Vegas, he'll spend half the night at a craps table.
 2) This argument does not need any hidden premise for supporting the conclusion. 3) This argument is clearly meant to be a deductive one. 4) As such, it is a valid argument.
  
- f. If you drive too fast, you're more likely to get a ticket, and the more likely you are to get a ticket, the more likely you are to have your insurance premiums raised. So, if you drive too fast, you are more likely to have your insurance premiums raised.  $\Rightarrow$  1) This argument has the following structure:
  - P1) If you drive too fast, you're more likely to get a ticket.
  - P2) The more likely you are to get a ticket, the more likely you are to have your insurance premiums raised.
  - C) If you drive too fast, you are more likely to have your insurance premiums raised.
 2) This argument does not need any other premise than P1) and P2). 3) Quite surprisingly, this argument is meant to be a deductive argument. 4) As such, it is deductively valid. But how? Not every argument about likelihood or probability is an inductive argument. Consider this argument: If Namjoong is a philosopher, then he is probably teaching in a university. Namjoong is a philosopher. Therefore, he is probably teaching in a university. Although this is about probability, the logical structure is clearly deductive one: If A then B; A; therefore B. Similarly, the argument "P1); P2); therefore C)" is also deductive. This becomes clearer if we rewrite it in this way:
  - P1) If you drive too fast, you're more likely to get a ticket.
  - P2) If you are more likely to get a ticket, then more likely you are more likely to have your insurance premiums raised.
  - C) If you drive too fast, you are more likely to have your insurance premiums raised.
 This argument has this form: If A, then B; If B, then C; therefore, if A then C. Obviously, this is a deductive argument, and as such, it is a valid one.

### Part 3. Valid or invalid?

For each of the arguments below, say whether it is valid or invalid.

- a. There are Taliban in North Waziristan; and if there are Taliban there, you can be sure they're in South Waziristan, too. So we have to believe there are Taliban in South Waziristan.  $\Rightarrow$  Valid. Note that this argument has the following form:

P1) A.

P2) If A, then B

C) Therefore, B.

This argument form is often called "modus ponens." All arguments of this form are valid.

- b. If Shelley has read the *Republic*, then she's bound to know who Thrasymachus is. And, since she clearly does know who Thrasymachus is, we can conclude that she must have read the *Republic*.  $\Rightarrow$  Invalid. Note that this argument has the following form:

P1) If A, then B.

P2) B.

C) Therefore, A.

An argument of this form, usually called "confirming the consequent," is often invalid.

- c. This zinfandel would have a smooth finish if it came from very old vines. In fact, it does have a smooth finish, so it must have come from very old vines.  $\Rightarrow$  Invalid. Like the previous argument, this is an example of the error of confirming the consequent. Note: We can rewrite it in this way:

P1) If this zinfandel came from very old vines, then it would have a smooth finish.

P2) It has a smooth finish.

C) It came from very old vines.

It will be easier to see that this argument is an example of confirming the consequent.

- d. If Jared studies really hard for the final, he will pass the course. [Later:] Well, Jared didn't study for the final, so it's a sure thing that he won't pass.  $\Rightarrow$  Invalid. Observe that this argument has the following form:

P1) If A then B.

P2) Not A.

C) Therefore, not B.

An argument of this form, called "denying the antecedent," is often invalid.

- e. If Sheila were ever to become a successful trader, she would have to develop a ruthless personality. But you know her: she could never be ruthless, even for a minute. So it's not going to be in her future to be a successful trader.  $\Rightarrow$  Valid. It is of this form:

P1) If A, then B.

P2) Not B.

C) Therefore, not B.

This argument form, usually called "modus tollens," is always valid.

- f. Joel will automatically be accepted provided he got his forms in on time. Unfortunately, he did not get his forms in on time; so he won't be automatically accepted. ⇒ Invalid.  
This is another example of denying the antecedent. For we can rewrite it in this way:  
P1) Joel will automatically be accepted if (=provided) he got his forms in on time.  
P2) He did not get his forms in on time.  
C) Therefore, he won't be automatically accepted.

### Part 3. A Debate

Read the short articles below. Which of (a)-(j) contain arguments? For each paragraph containing an argument,

- 1) identify the premises and conclusion,
- 2) write the hidden premises and/or conclusion if any,
- 3) say whether the given argument is meant to be deductive or inductive, and
- 4) if it is deductive, say whether it is valid or invalid, or if it is inductive, evaluate the strength of the argument.

Then,

- 5) identify the issue,
- 6) identify the conclusion of each of the whole articles, and
- 7) say, in your opinion, which article offers a stronger argument, and explain why

A college is a business as much as any company, so dress standards should normally be expected.

By Dan Creed

- a. The familiar phrases "dress for success " or "the clothes make the person" are as true for college faculty as they are in the corporate world. ⇒ This passage itself does not contain an argument. Rather, it is the statement of the entire article's conclusion.
- b. First, let's address the question of why business etiquette deems a dress code proper in the business world. It is understood that dress does convey confidence, personal success and a respect to those with whom you are engaged in business. That is the philosophy behind IBM's dress code for its sales force. The leadership understands that proper dress gives their sales force an edge. Similarly, if you visited a fine dining restaurant, you might be offended if the host was dressed in worn out blue jeans. ⇒  
1)&2) This passage contains the following argument, with hidden premises P2) and P4):  
P1) The leadership (of IBM) understands that proper dress gives their sales force an edge.  
P2) If P1), it is likely that C). (≤ hidden premise)  
P3) if you visited a fine dining restaurant, you might be offended if the host was dressed in worn out blue jeans.  
P4) If P3), then it is likely that C). (≤hidden premise)  
C) Dress does convey confidence, personal success and a respect to those with whom you are engaged in business.

P2) and P4) are somewhat plausible. 3) As such, the above argument is an inductive argument. 4) As such an argument, it seems moderately strong, but I don't think it is beyond any doubt.

- c. I have asked the question about faculty dress and the majority have stated they appreciate when an instructor dresses up, at least in business casual. They voiced their appreciation for the instructor going to the extra effort to show respect to the students. Students do "get" the message being conveyed---respect. ⇒ 1) & 2) This passage contains the following argument:

P1) The majority of the students appreciated when an instructor dresses up.

P2) If they appreciated when an instructor dresses up, then she should dress up.  
(a hidden premise)

C) Therefore, an instructor should dress up. (The hidden conclusion)

- 3) As such, this argument seems to be a deductive one. 4) As such, it is valid.  
(However, the premises are not entirely uncontroversial.)

- i. Appropriate dress is socially an acceptable and expected gesture as well, whether going to a wedding, church, or funeral. Many cultures consider improper dress rude and disrespectful and guests are not allowed entrance if not properly attired. Sadly, American culture seems to have lost a sense of respect when it comes to dressing for certain occasions, such as a funeral. At Normandale College where I teach, many of the instructors in the business and hospitality departments emphasize dress as an important point of etiquette for our students and demonstrate how proper dress gives them an edge in the job market. It only stands to reason that we would reinforce this instruction by personally setting an example. ⇒ This passage contains a report of facts, namely, the dress codes of various cultures and that of Normandale College.

5) The issue appears to be whether colleges need to have dress codes for college faculty.

6) The conclusion is found in the first paragraph: "The familiar phrases "dress for success " or "the clothes make the person" are as true for college faculty as they are in the corporate world." Or, more succinctly, the conclusion is "college faculty need to satisfy the dress codes, just as businessmen do."

college faculty are professionals and should not have a dress code.

By Andy Wible

- d. There are several reasons faculty should not have a dress code. First, college faculty are role models and should be teaching students that it is not what a person wears, but the content of a person's words and actions that matters. ⇒ 1)&2) This passage contains the following argument:

- P1) College faculty ... should be teaching students that it is not what a person wears, but the content of a person's words and actions that matters.
- P2) If college faculty have dress codes, then they would not be teaching students that it is not what a person wears but the content of a person's words and actions that matter. ( $\leq$  hidden premise)
- C) College faculty should not have dress codes.
- 3) This is a deductive argument because it is an example of *modus tollens*. 4) As such, it is valid.
- e. Second, the professional faculty members themselves are the best ones to determine what form of dress is most suitable to their teaching style. Some teachers may decide to be formal and some may decide to be casual, the dress of each fitting the pedagogy that they desire.  $\Rightarrow$  1)&2) This passage contains this argument:
- P1) The professional faculty members themselves are the best ones to determine what form of dress is most suitable to their teaching style.
- P2) If P1), then C) ( $\leq$  the hidden premise)
- C) Colleges should not have (unified) dress code for their faculty members. ( $\leq$  the hidden conclusion)
- 3) As such, this argument is deductive. 4) As a deductive argument, this is successful because valid. Note: The second sentence in the passage seems to be an elaboration of P1) rather than a reason for accepting P1).
- f. Third, when it comes to employment, sectors differ as to what appropriate dress is. wearing a tie when fixing a wind turbine might lead to suffocation. Even if business standards differ, some require a tie, but others such as Internet companies are notorious for encouraging Saturday casual. The companies value the input of the employee over the veneer of their clothing, and believe that better ideas come from people who are comfortable.  $\Rightarrow$  1)&2) This passage contains this argument:
- P1) Some companies, such as Internet companies, are notorious for encouraging Saturday casual.
- P2) If P1), universities shouldn't have unified dress codes for the faculty members.
- C) Universities shouldn't have unified dress codes for their faculty members.
- P2) and C) are hidden premise and conclusion. Note that P2 is, to some extent, plausible. Remember: when you try to identify a hidden premise, it does not only connect the other premises and the conclusion but the additional premise itself should be plausible, that is, likely to be true. 3) This argument is deductive. 4) It is valid. Note: The first sentence in the original passage does not appear to be indispensable. For the author's argument, the important fact is that some companies encourage (Saturday) casual, not that different companies have different dress codes.

- g. One argument might be that there should be dress codes appropriate to each discipline. Physical education faculty wear track suits, management faculty suits, and philosophy faculty togas. The problem is that there is disagreement within these areas, and once again the professional faculty member should determine what is best.  $\Rightarrow$  1)&2) This passage contains the following argument:
- P1) There is disagreement within (each of?) these areas .
  - P2) The professional faculty member should determine what is best.
  - P3) If P1) and P2), then it is not even the case that there should be dress codes appropriate to each discipline. ( $\Leftarrow$  hidden premise)
  - C). Therefore, it not even the case that there should be dress codes appropriate to each discipline. ( $\Leftarrow$  hidden conclusion)
- 3) This argument is deductive. 4) This is valid. Note: The passage first mentions an argument with the conclusion that there should be dress codes appropriate to each discipline---we do not know what that argument is like---and then argue that
- h. Some classes could properly discuss appropriate dress in certain circumstances. Political science classes might discuss the importance of wearing a black robe if you are a Supreme court justice. But the classroom is not a court; it is a place for the mind to be cultivated and diversity encouraged.  $\Rightarrow$  1)&2) The argument seems to be this:
- P1) Some classes could properly discuss appropriate dress in certain circumstances.
  - P2) The classroom is not a court, but it is a place for the mind to be cultivated and diversity encouraged.
  - P3) If P1) but P2), then it is not required to wear a specific dress in the class. ( $\Leftarrow$  the hidden premise)
  - C) Therefore, it is not required to wear a specific dress in the class.
- 3) This is a deductive argument. 4) It is valid.
- i. Dress codes in academia should be limited to one day a year.. graduation.  $\Rightarrow$  This is a passage containing the statement of the conclusion, not an argument.
- 5) The issue is whether the colleges faculty ought to have dress code.
- 6) The conclusion of this articles is that they should not have dress code.
- 7) In my opinion, the second article defends its conclusion better. For, it is easier to identify the logical structure of the argument in each passage, and even when the given argument has a hidden premise, the additional premise seems more plausible.