WMA – MATHSWELL 2016 - *Instructions*

There are two identical rounds for the competition. Each round consists of a multi-choice section (15 questions in 10 minutes) and a problem solving section (12 questions in 15 minutes), with each section completed by 3 team members. At the conclusion of each round return the attached answer sheet to the co-ordinator, ensuring the school name is clearly indicated. ***Scrap paper and calculators are allowed.***

Multi-choice:

1. Fill in the school's name on the answer sheet and once the time commences give the students the set of multi-choice questions.
2. The team can answer the questions in any way they want (they can work together on the questions but they will get more questions done if they divide the pages between the team).
3. They need to record their answers on the multi-choice answer sheet by writing the letter of their chosen answer.
4. The teams will be given a two-minute warning to make sure that all answers are written on the answer sheet.
5. At the end of **10 minutes** they will be asked to stop writing. Please ensure that the team you are marking stops writing.
6. Mark the answers in front of the team (have them confirm the total), and put the total in the space provided.
7. Make sure the name of the school is on the answer sheet and then return the completed form to the co-ordinator.

Problem Solving:

1. One team member collects the first question from the marker's desk. (Please tear each question from the booklet, one at a time.)
2. The group is allowed to work on it for as long as they wish.
3. When they have a solution written on the question paper a team member hands it to the marker.
4. The marker is allowed to give TWO responses:
   (a) CORRECT – then give the next question is given to the team. Put a ✔ in the 1st column.
   (b) WRONG – the team has another chance to do the question. Put a × in the 1st column. When they hand back their 2nd answer, give them the next question and put a ✔ or × in the 2nd column.
   (c) The team may choose to pass on a question in which case you put a P in the appropriate column.
5. As a marker you need to check the following:
   - Make sure that you give the next question promptly so you don't hold up the team
   - Collect all the questions back from the team so they can't go back to any questions.
6. The team has **15 minutes** to do this part of the competition and will get a 2-minute warning.
7. Complete the total for the problem solving component and then return the completed form to the co-ordinator.

There will be a short 10-minute break in between rounds in which two divisions will constructed based on the combined performance of the multi-choice and problem solving components from round one.

Teams are ranked for each round of the competition. 1 point for first, 2 second and so on. Ties get the same points. The two rankings from each round are added together to determine the overall final placing for the *plate* and the *cup* divisions.

Year 11 Mathswell 2016 - Round One Multi-choice

Time Allowed: **10 minutes**

School: _____Students 1. _____
2. _____
3. _____

Total

Question	Answer	✔ or ×
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Year 11 Mathswell 2016 - Round One Multi-choice – Solutions

Time allowed: 10 minutes for 15 questions

Instructions

Scrap paper and calculators are allowed.
The use of the internet is not allowed.

1. The multi-choice questions are answered either as a team or as individuals. The team gets 15 multi-choice questions at the beginning and can decide how to answer them.
2. At the end of 10 minutes ONE answer sheet only must be presented.
3. The marker marks the questions in front of the team and puts the total correct in the box at the top. The team should check the marking to ensure it is marked correctly and that the total is correct.
4. Once completed, the marker takes the answer sheet back to the organisers. The team can retain the questions.

Question	Answer
1	B
2	A
3	B
4	C
5	A
6	D
7	A
8	B
9	E
10	B
11	B
12	D
13	B
14	C
15	A

Year 11 Mathswell 2016 - Round One Problem Solving

Time Allowed: **15 minutes**

School: _____Students 1. _____
2. _____
3. _____

Total

Instructions

1. One team member collects the first question from the marker's desk. (Please tear each question from the booklet, one at a time.)
2. The group is allowed to work on it for as long as they wish.
3. When they have a solution written on the question paper a team member hands it to the marker.
4. The marker is allowed to give TWO responses:
   Either **CORRECT** in which case the next question is given to the team
   Or **INCORRECT** in which case the team decides whether to try again or pass and ask for the next question.
   If a question has 2 or more parts to the answer, the marker cannot indicate which parts of the answer are correct if the full correct answer has not been given.
5. Two attempts only per question are permitted.
6. Once passed, the team cannot come back to answer a passed question.
7. The marker puts a tick, cross of P (for pass) in the appropriate column for each question.
8. When time is up, tally up the number of correct answers (1st or 2nd attempts) and write the total above.
9. Complete the total for the problem solving component and then return the completed form to the co-ordinator.

Question	Answer	1st	2nd
1	-40		
2	$1 / 144 \approx 0.006944..$		
3	10 integer values		
4	12		
5	40		
6	7 / 100 = 0.07		
7	7.2 seconds		
8	27cm²		
9	$2+\sqrt{2} \approx 3.142...cm^2$		
10	50cm		
11	7 students		

12	$p + q = 21$		

Year 11 Mathswell 2016 - Round Two Multi-choice

Time Allowed: **10 minutes**

School: _____ **Students** 1. _____
2. _____
3. _____

Total

Question	Answer	✔ or ×
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Year 10 Mathswell 2016 - Round Two Multi-choice – Solutions

Time allowed: 10 minutes for 15 questions

Instructions

Scrap paper and calculators are allowed.
The use of the internet is not allowed.

1. The multi-choice questions are answered either as a team or as individuals. The team gets 15 multi-choice questions at the beginning and can decide how to answer them.
2. At the end of 10 minutes ONE answer sheet only must be presented.
3. The marker marks the questions in front of the team and puts the total correct in the box at the top. The team should check the marking to ensure it is marked correctly and that the total is correct.
4. Once completed, the marker takes the answer sheet back to the organisers. The team can retain the questions.

Question	Answer
1	C
2	A
3	E
4	C
5	D
6	A
7	D
8	D
9	C
10	E
11	D
12	B
13	A
14	E
15	A

Year 11 Mathswell 2016 - Round Two Problem Solving

Time Allowed: **15 minutes**

School: _____ **Students** 1. _____
2. _____
3. _____

Total

Instructions

1. One team member collects the first question from the marker's desk. (Please tear each question from the booklet, one at a time.)
2. The group is allowed to work on it for as long as they wish.
3. When they have a solution written on the question paper a team member hands it to the marker.
4. The marker is allowed to give TWO responses:
   Either **CORRECT** in which case the next question is given to the team
   Or **INCORRECT** in which case the team decides whether to try again or pass and ask for the next question.
   If a question has 2 or more parts to the answer, the marker cannot indicate which parts of the answer are correct if the full correct answer has not been given.
5. Two attempts only per question are permitted.
6. Once passed, the team cannot come back to answer a passed question.
7. The marker puts a tick, cross of P (for pass) in the appropriate column for each question.
8. When time is up, tally up the number of correct answers (1st or 2nd attempts) and write the total above.
9. Complete the total for the problem solving component and then return the completed form to the co-ordinator.

Question	Answer	1st	2nd
1	$5 / 8 = 0.625$		
2	$k > 2 / 3$		
3	Zero		
4	$10\pi / 9 \approx 3.490...cm$		
5	960 metres		
6	$\sqrt{2} / 16 \approx 0.08838...$		
7	12 sides		
8	80 balls		
9	$x = 2$		
10	3 prime numbers		

11	$y = 0.5x \ or \ x - 2y = 0$		
12	$(\pi - 1)/2 \approx 1.0707...m^2$		