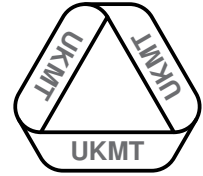


## Instructions

- Time allowed: 45 minutes.
- There are 15 questions to try to answer in the time allowed.
- Each question is worth *four* marks. A question is marked either correct or incorrect — no partial marks are awarded.
- Some questions are easier than others!
- You will have to decide your team's strategy for this group competition. Do you split up so that individuals work on a few questions each, or do you work in pairs on a greater number of questions? Working all together on all the questions may well take too long. You decide!
- There is only one RESPONSE SHEET per team. Five minutes before the end of the time you will be told to finalise your answers and write them on to the RESPONSE SHEET. This RESPONSE SHEET is the only thing that will be marked.
- Answers should be in their simplest form where appropriate.



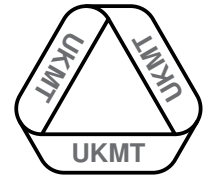
## QUESTION 1

In the local secondary school 40% of the pupils are boys.

There are 300 boys in the school.

How many of the pupils are girls?

[4 marks]

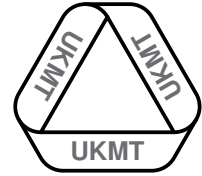


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## QUESTION 2

Albert is Alberta's brother and Daniel is Danielle's brother. In how many different ways can all four of them stand in a line so that neither of the two girls is next to her brother?

[4 marks]

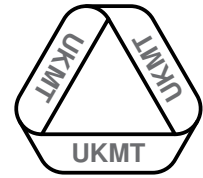


## QUESTION 3

I travel 44 kilometres in 40 minutes.

What is my average speed in kilometres per hour?

[4 marks]



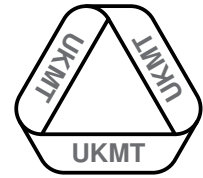
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## QUESTION 4

Mary writes down six consecutive square numbers in order. She found that the sum of the first five of these square numbers was 510.

What is the largest square number in her list?

[4 marks]

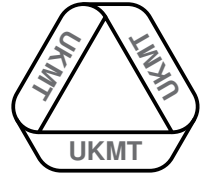


## QUESTION 5

Dennis is given the six digits: 3, 7, 4, 9, 1, 8. He finds all the 4-digit numbers he can make using 4 different digits from the ones he is given. He writes these down in numerical order starting with the largest.

What is the fifth number in this list?

[4 marks]



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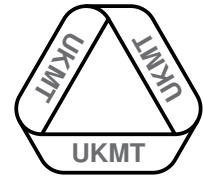
## QUESTION 6

A very large sheet of paper (and I mean very large!) is 1 millimetre thick.

It is folded in half, then folded in half again. This continues until the first time that the paper is more than 1 metre thick in total.

How many times was the paper folded in half?

[4 marks]



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## QUESTION 7

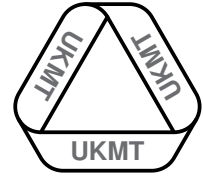
I travel to Edinburgh by train. The 192 km journey takes 1 hour 20 minutes.

I am offered a lift back home by car. This 213 km journey takes 3 hours and 10 minutes.

What is my average speed for the whole journey in km/hour?

[4 marks]





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## QUESTION 8

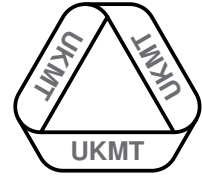
Sam has twice as many grapes as Bill.

Jack has three times as many grapes as Adam.

Bill and Adam share 30 grapes. Adam has 6 more grapes than Bill.

How many grapes in total do they have between them?

[4 marks]



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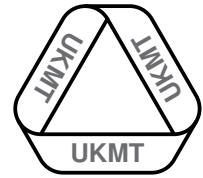
## QUESTION 9

£1 is the same as 1.60 Canadian dollars.

One Canadian dollar is the same as 1.20 Australian dollars.

How many Australian dollars are the same as £1?

[4 marks]



## QUESTION 10

Jane answered a survey she found in the local paper.

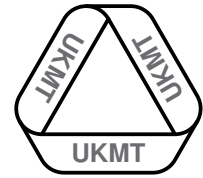
There were 10 questions with options a and b for each question.

You scored 3 points if you chose option a and 2 points if you chose option b.

Jane answered all the questions and scored 22 points.

How many times did she choose option a?

[4 marks]

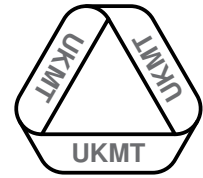


## QUESTION 11

The local country park covers an area of 100 000 square metres. The park's lake covers one-fifth of the area of the park. The park's play areas for the children cover one-twentieth of the total area of the park. Footpaths cover a further three-fortieths of the park's area. Three-tenths of the park is grassland. The rest of the park is woodland.

How many square metres of woodland is there in the country park?

[4 marks]

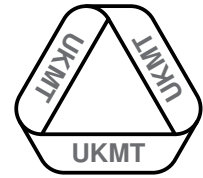


## QUESTION 12

All the whole numbers starting with the number 1 up to and including the number 100 are written down in order.

What is the sum of all the digits that have been written down?

[4 marks]



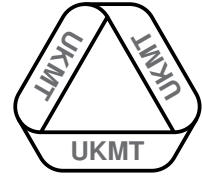
## QUESTION 13

When Angela ran a 10km race her average speed was 8 km/h.

She stopped twice, once for 10 minutes and once for 15 minutes.

What was her average speed in km/h while she was actually running?

[4 marks]

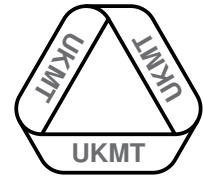


## QUESTION 14

The perimeter of a square is 14 centimetres.

What is the area of the square in square centimetres?

[4 marks]



## QUESTION 15

My 4 digit telephone number consists of exactly two different non-zero digits each appearing twice.


Both the repeated digits are square numbers.

How many possible telephone numbers are there?



[4 marks]





TEAM NUMBER 

SCHOOL NAME 



1. Number of girls



6. How many times



11. Area



2. Number of ways



7. Average speed



12. Sum of digits



3. Kilometres per hour



8. How many grapes

13. Average speed



4. Largest square number

9. Australian dollars for £1



14. Area



5. Fifth largest number

10. How many times?

15. Number of possible telephone numbers

Award 4 marks for a correct answer.  
Circle the mark awarded for each question and cross out the other .

FINAL SCORE /60 