# 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.

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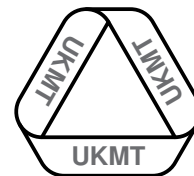RESOURCES
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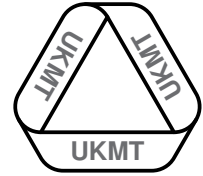
QUESTION 1

The ages of four friends Sam, Joey, Sarah and Richard add up to 41.

Sarah and Joey are the same age and are the eldest while Sam is two years younger than they are.

Richard is three years younger than Sam.

How old is Richard?

[4 marks]

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QUESTION 2

$$B + A + R + E = 21$$
$$C + A + R + E = 15$$
$$D + A + R + E = 14$$
$$H + E + A + R = 9$$

Each of the letters represents a different number.

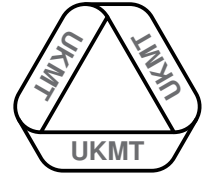What is the value of $C - H$?

[4 marks]
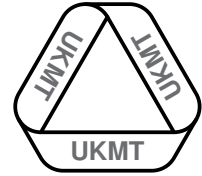
QUESTION 3

4 'ticks' plus 6 'crosses' give 10 'marks' and 5 'ticks' plus 3 'crosses' give 17 'marks'.

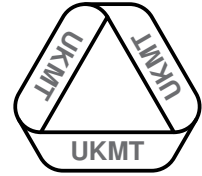How many 'marks' are given for 1 'tick' plus 1 'cross'?

[4 marks]

QUESTION 4

If you write down the numbers from 1 to 1000 inclusive in numerical order how many times will you write down the digit '1'?
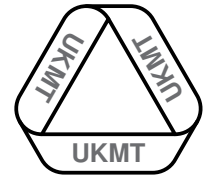
[4 marks]

QUESTION 5

Alan had a day in town with his friends, He spent $\frac{2}{5}$ of his money at the cinema and $\frac{1}{4}$ of his money on food.

It cost him £4 to get to and from town on the train and he had £3 left when he arrived back home.

How much did he spend at the cinema?

[4 marks]

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QUESTION 6

Each letter of the alphabet is given a numerical value.

$A = 1, B = 2, C = 3$, and so on until $Z = 26$.

What is the numerical value of

$P + R + I + M + A + R + Y$?

[4 marks]
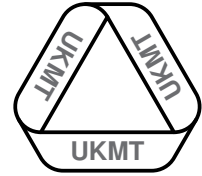
QUESTION 7

At midday, I leave to go to the airport.

I drive 160 km to the airport at an average speed of 60 km/hour.

I spend an hour at the airport.

I go a different way home. This time the journey is 180 km and my average speed is 80 km/hour.

At what time do I arrive home?

[4 marks]

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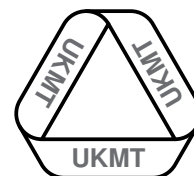
QUESTION 8

I have to choose a five-a-side football team from 4 boys and 3 girls.

In how many different ways could I pick the team?

[4 marks]
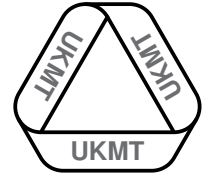
QUESTION 9

I ran my fastest ever marathon yesterday.

It was 7 minutes 32 seconds faster than my previous best.

It was 23 minutes 14 seconds faster than my first ever marathon.

I ran my first ever marathon in 4 hours 25 minutes 6 seconds.

How fast did I run my previous best marathon?

[4 marks]

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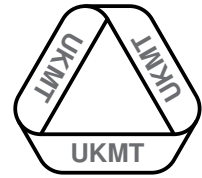
QUESTION 10

The local hotel has 200 rooms.

The rooms are numbered in ascending order starting with the number 1.

However, the owners are a superstitious lot.

None of the rooms have a number which is a multiple of 13 or has the sum of the digits of the room number equal to 13.

These rooms are given names instead of numbers.

How many rooms have names instead of numbers?

[4 marks]

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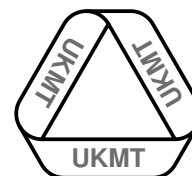
QUESTION 11

The sum of six consecutive prime numbers is 204.

What is the sum of the first and sixth of these prime numbers?

[4 marks]

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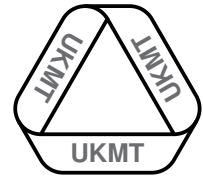
QUESTION 12

The local postie delivers the post on six days each week.

Last week on the first five days his average time to finish delivering the post was 75 minutes.

On the sixth day he took 69 minutes.

What was his average time for delivering the post over the whole six days?

[4 marks]

QUESTION 13

I leave London at midday on a flight to Toronto.

The flying time from London to Toronto is 8 hours.

I wait in Toronto for 2 hours before I fly on to Vancouver which takes a further 3 hours.

The time in Toronto is 5 hours behind the time in London and Vancouver is 7 hours behind the time in London.

What is the local time in Vancouver when I arrive there?

[4 marks]

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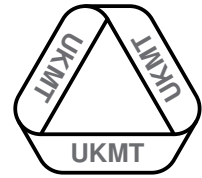
QUESTION 14

Twenty four teams entered the local school football tournament.

They were placed into groups of four schools and each school played the other schools in their group once.

The top two in each group and the four best third placed schools went forward to the knock-out stage.

How many games had been played when the winning school was known?

[4 marks]

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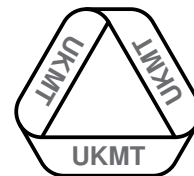
QUESTION 15

I write down three consecutive whole numbers.

The sum of the smallest number and the square of the middle number and the cube of the largest number is 245.

What is the smallest number?

[4 marks]

TEAM NUMBER [ ]   SCHOOL NAME [   ]

1. Age

(0) (4)

2. Value

(0) (4)

3. total Value

(0) (4)

4. write down digit

(0) (4)

5. Amount spent

(0) (4)

6. Value

(0) (4)

7. Time back home

(0) (4)

8. Number of teams

(0) (4)

9. Time for previous marathon

(0) (4)

10. How many rooms?

(0) (4)

11. Sum of prime numbers

(0) (4)

12. Average time

(0) (4)

13. Arrival time

(0) (4)

14. Number of games

(0) (4)

15. Smallest number

(0) (4)

Award 4 marks for a correct answer.

Circle the mark awarded for each question and cross out the other .

FINAL SCORE /60 [ ]