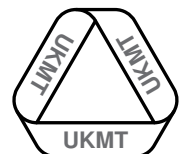


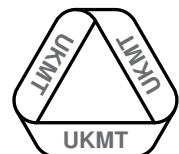
# GROUP ROUND INSTRUCTIONS

- Your team will have 45 minutes to answer 10 questions. Each team will have the same questions.
- Each question is worth 6 points. However, some questions are easier than others!
- You will have to decide your team's strategy for this group competition.
- 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 the response sheet. This response sheet is the only thing that will be marked.



# QUESTION 1

A bag contains £20.14 consisting of 50p, 20p, 10p, 5p, 2p and 1p coins only. If there are at least 14 of each of these coins in the bag, what is the least possible number of coins in the bag?

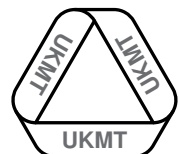


## QUESTION 2

Points  $A$ ,  $B$  and  $C$  lie in that order on a straight line.

A point  $D$ , not on the line, is placed such that  $AD = AB$ ,  $BD = BC$ , and  $\angle BDC = 25^\circ$ .

What is the value of  $\angle DAB$ ?

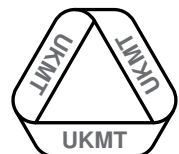


## QUESTION 3

On a certain Monday, whilst Jo and Nicky tweeted, Steve had his face in a book.

The next day, whilst Jo and Steve tweeted, Nicky had her face in a book. A day later, whilst Nicky and Steve tweeted, Jo had her face in a book. This pattern repeated every three days until once again on a Monday, Jo and Nicky tweeted whilst Steve had his face in a book.

On how many days did Steve tweet over this period?



## QUESTION 4

Every day Keith has a breakfast, a lunch and a dinner.

The options for each meal are:

Breakfast: Cereal and/or Fruit

Lunch: Soup and/or a Sandwich

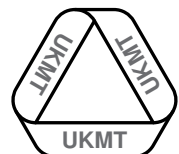
Dinner: Pasta and/or Curry

One day Keith eats four items. In how many different ways can he do this?

## QUESTION 5

Pam was born on Saturday 2nd February 2002. From then on Pam's grandparents saved £1 every Sunday until her 6th birthday.

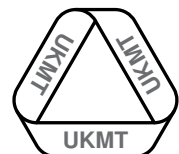
How much money did they save?



## QUESTION 6

In a junior league each team plays each of the other teams twice during the season — once at home and once away. There are 56 matches in total during the season.

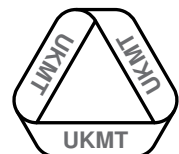
How many teams are there in the league?



## QUESTION 7

A cube is placed on a horizontal table. The vertices around the top face are labelled  $A$ ,  $B$ ,  $C$  and  $D$  in that order, going clockwise. The corresponding vertices around the base of the cube are labelled  $E$ ,  $F$ ,  $G$  and  $H$ . This means that vertex  $E$  is directly below vertex  $A$ ,  $F$  is directly below  $B$  and so on.

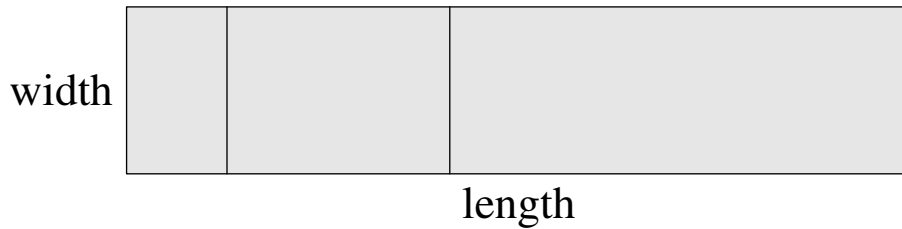
Find the size of the angle made at  $C$  by the lines  $AC$  and  $CH$ .





## QUESTION 8

The length of a rectangle is five times its width. The rectangle is divided into three smaller sections by two vertical lines. The areas of the three smaller sections are in the ratio 3 : 7 : 15. The area of the middle section is  $35 \text{ cm}^2$ .

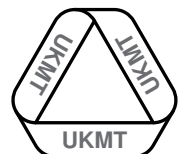


What is the base length of the original rectangle?

## QUESTION 9

In a list of seven consecutive numbers a quarter of the smallest number is five less than a third of the largest number.

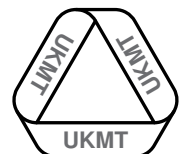
What is the value of the smallest number in the list?



## QUESTION 10

Six of the prime numbers less than 20 are separated into three pairs.  
Each pair has the same sum.

What is the value of this sum?



TEAM NUMBER

SCHOOL NAME

1. Number of coins:

6

0

6. Number of teams:

6

0

2. Number of degrees:

6

0

7. Size of angle:

6

0

degrees

3. Number of days:

6

0

8. Length of rectangle:

6

0

cm

4. Number of ways:

6

0

9. Smallest number:

6

0

5. Amount of money:

6

0

£

10. Sum of each pair:

6

0

Award 6 marks for each correct answer.  
 Circle the mark awarded for each question and cross out the other.

FINAL SCORE /60