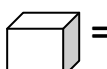# GROUP ROUND

- Time allowed is 25 minutes.

- There are 10 questions to try to answer in the time allowed.

- Each question is worth *six* 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 answer 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 answer sheet. This answer sheet is the only thing that will be marked. Working out is not required.

- Answers should be in their simplest form where appropriate.

Answer Sheet (Ignore Units)

School Name _____   **School Number** _____

Question 1	**Question 2**
Question 3	**Question 4**
Question 5	**Question 6**
Question 7	**Question 8**
Question 9	**Question 10** = = = = All correct = 6 marks. 0 marks if they are not all correct.
Award six marks for each correct answer.	**Total:**

Question 1

A group of 20 students attempting a Mathematical Challenge have an average age of 11. When their teacher is included their average age is 12.

What is the age of the teacher?

Question 2

The walk to and from school is a distance of 1.5 km in total.

How far did I walk in a school year (190 days) if I went home for lunch on ⅕ of those days?

Question 3

The perimeter of a rectangle is 96cm, and the longer side is three times the length of the shorter side.

What is the area of a square whose perimeter is the length of the longest side of the rectangle?

Question 4

What is the sum of all the prime numbers greater than 30 but less than 50?

Question 5

You have 250 1cm^2 square tiles which are either red or blue. There are enough 1cm^2 square tiles of each colour to make up a larger square where both diagonals are made up entirely of blue square tiles. If you made up the largest possible square how many blue 1cm^2 square tiles would you need along the diagonals?

Question 6

The school basketball team have had a good season so far. They have scored 2011 points in total, with a highest score of 110 points in one game, and the lowest score being 101 points just once.

How many games have the team played so far this season?

Question 7

6 'bits' is the same as 11 'pieces'.

And 2 'pieces' is the same as 5 'parts'.

How many 'parts' is 24 'bits' worth?

Question 8

An aeroplane leaves Cape Town, South Africa, and arrives in Toronto, Canada, at 16:00 hours local time.

Cape Town is 2 hours ahead of London time (GMT) and Toronto is 5 hours behind London time.

Given that there was a 3 hour stopover in London and the flying time from Cape Town to London was 4 hours and from London to Toronto was 7 hours at what time (Local Time) did the flight leave Cape Town?
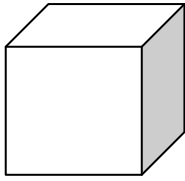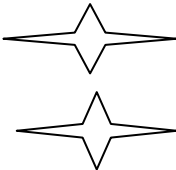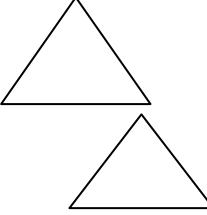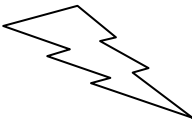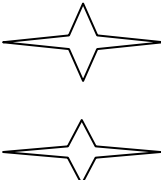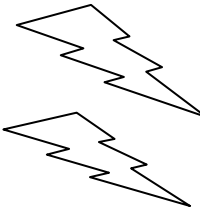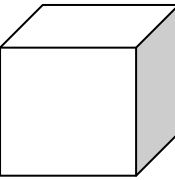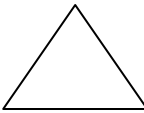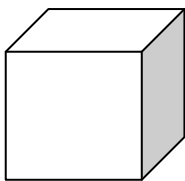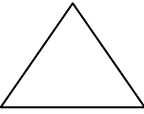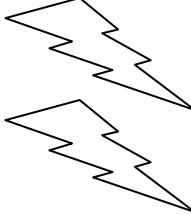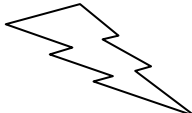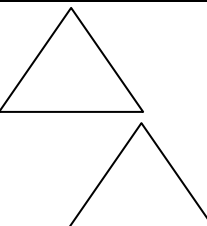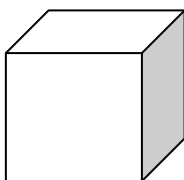
Question 9

Two athletes, Sarah and Jack, start to run round a 400m athletics track. Jack runs clockwise at 5m/s and Sarah runs at 3m/s anticlockwise.

How far apart along the running track are they after 1 minute?

Question 10

Each symbol represents a different whole number. If a symbol appears twice then the value in the box is doubled. The totals of each row and column are given.

cube	star ×2	triangle ×2	lightning	**29**
star ×2	lightning ×2	cube	triangle	**31**
cube	triangle	lightning ×2	star	**28**
lightning	star	triangle ×2	cube	**26**
25	**28**	**40**	**21**	

What is the value of each symbol?