

SET ONE

Time allowed — 30 minutes

1. Alama is one year younger than Brad. Claire is one year older than Brad. The sum of their three ages is 33.

How old is Claire?

2. Whitcoulls are having a book sale with 20% off all their books. At the sale Jonni pays \$16 for his favourite Harry Potter book.

What was the original (non-sale) price of the book?

3. The remaining squares in the 5×5 grid shown are filled in so that each of the numbers 1, 2, 3, 4, 5 appears once in every row and once in every column of the grid.

1	2	3	4	5
2				1
3				2
4				3
5	1	2	3	4

What number goes in the (outlined) middle square?

4. The Nutt family are mad about nuts. At every meal all Nutts eat some nuts. Pa Nutt always eats more nuts than Ma Nutt but never eats more than half the nuts. Ma Nutt always eats the same number of nuts as both children together, and the two children always eat the same number of nuts as each other. At the last meal they ate 27 nuts altogether.

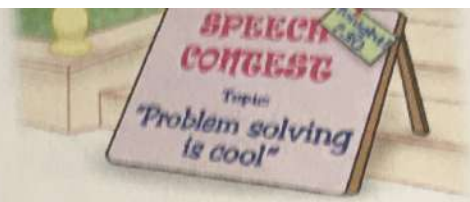
How many nuts did Pa Nutt eat ?

5. The average weight of a team of children is 50 kilograms. Todd, who weighs 56 kilogram then joins the team. The average weight of the new team is now 51 kilograms.

How many children were in the original team?



SET TWO



Time allowed – 30 minutes

1. Insert + or - between these numbers so that the total is 10:

8 4 2 3 5

- 18/2/16 2. It takes 4 men 5 days to dig a ditch 60m long.
How long does it take for 3 men to dig a ditch 72m long ?

3. 16 speakers have entered a speech contest. Each speaker will talk for exactly 5 minutes.
There will be a gap of 2 minutes between the speeches.

However only 15 speakers turn up. If the contest is to take the same total time as before and speeches still last for 5 minutes, how long should the gap be between speeches ?

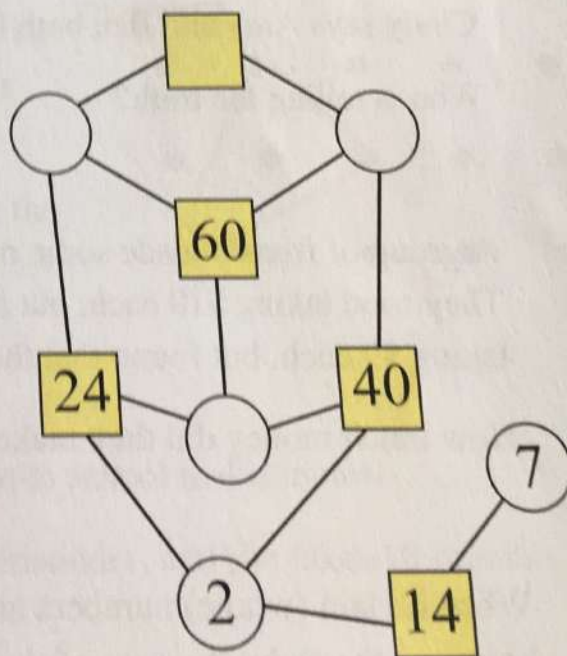
4. Numbers are placed in the circles and squares to follow this rule:

The number in each square is the product of the numbers in the circles that are joined to that square by a line.

For example, $14 = 2 \times 7$.

Some of the numbers are shown.

What number will be placed in the blank square at the top ?



5. How many of the numbers from 1 to 1000 contain at least one "3" digit ?
(For example, the numbers 32, 413 and 833 all contain at least one "3".)

SET THREE

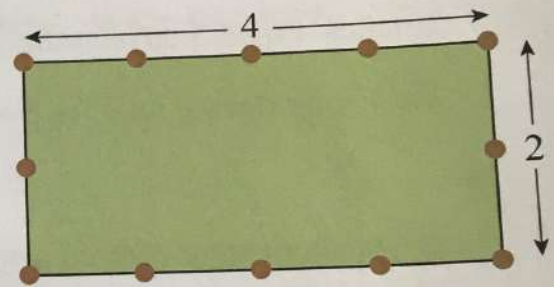


Time allowed — 30 minutes

1. Lisa's dad is in his thirties. His age is a multiple of 4. In one year's time his age will be a multiple of 3.

How old is he now?

2. Caleb has a rectangular garden with a fence around it and so does Ralph. In both gardens the fence posts are one metre apart. Caleb's garden is 4 metres long and 2 metres wide as shown.



Ralph's garden is 10 metres long and 4 metres wide. How many posts are there around Ralph's garden?

3. Amy says Ben lies.
Ben says Cindy lies.
Cindy says Amy and Ben both lie.

Who is telling the truth?

4. A group of friends made some money selling lemonade and decided to share the money. They tried taking \$10 each, but found that the last person received only \$1. They tried taking \$9 each, but found that the last person received only \$6.

How much money did they make ?

When certain (whole) numbers are placed in the empty boxes on the right, the sum of the numbers along any row, column or diagonal of the square is the same.

What number goes in the top right hand square?

6		?
6		
		8











SET FOUR



Time allowed – 30 minutes

1. Jamie has twice as many CDs as Karla, and Karla has twice as many CDs as Tina. If they have 42 CDs in total, how many does Tina have?

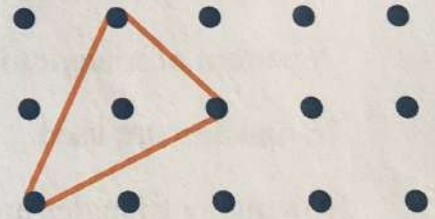
2. In “face writing” the number 4168 is written    .

What is the result of   +   written in face writing?

3. Leanne finds that a jar filled with sand weighs 160 grams. When the jar is filled with sugar it weighs 115 grams. If sand weighs twice as much as sugar, how heavy is the jar itself?

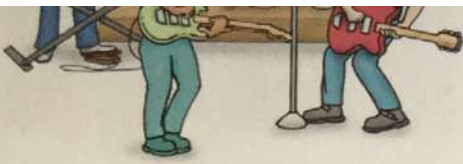
4. Fred has hammered fifteen nails into a board as shown. He has an elastic band which he can stretch around the nails. One position is shown where the band forms a triangle.

How many different *squares* can he make by stretching the elastic band around some of the pegs?



5. Nicola can walk to school in 12 minutes, or she can run to school in 4 minutes.

One day she walks part of the way and then runs the remainder, and she takes 10 minutes in total. For what length of time did she walk?



SET FIVE

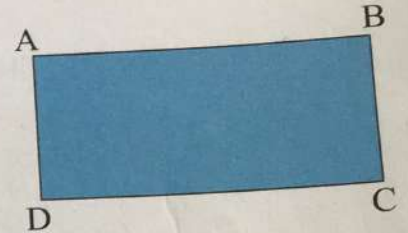


Time allowed — 30 minutes

1. When 3 whole numbers are added together they give a total of 11. When the same 3 numbers are multiplied together the result is 40.

What are the three numbers?

2. Rawiri walks around the edge of a rectangular swimming pool (shown) from point A to B to C to D, a distance of 38 metres. He then walks from point D to A to B to C, a distance of 31 metres.



What is the perimeter of the pool in metres?

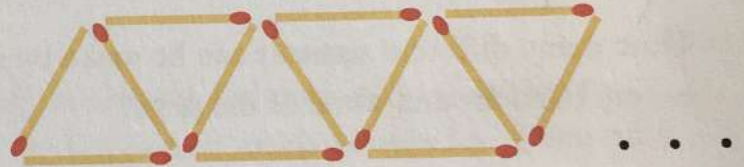
3. Posh Prams make two different types of pram: the X-plorer, which has 4 wheels, and the Y-goslow, which has 3 wheels. Last week Posh Prams made 10 prams and used 33 wheels.

How many Y-goslows did they make?

4. A pattern of triangles is made from matches, as shown below:

75 matches are used.

How many triangles are formed?



5. The members of the school's rock band, Chris, Guy, Jonny and Will, are to stand in line for a photo. A teacher will arrange them randomly (that is, in no particular order).

What is the probability that Chris and Guy will stand next to each other?