Question 1

What is 2010 + (+2010) + (-2010) - (+2010) - (-2010)?

Question 2

How many digits are there in the correct answer to the calculation 123,123,123,123 ÷ 123?

Question 3

Mr Mitchell wants to keep the students quiet during a mathematics lesson. He asks them to multiply all the numbers from 1 to 99 together and then tell him the last-but-one digit of the result. What is the correct answer?

Question 4

The diagram shows a shape made from four 3 cm x 3 cm x 3 cm

wooden cubes joined by their edges.
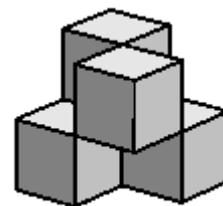
What in cm2 is the surface area of the shape?

Question 5

Adding four of the five fractions 1/2, 1/3, 1/6, 1/9 and 1/18 gives a total of 1. Which of the fractions is not used?

Question 6

Ali wants to fill the empty squares so that the number in each square after the fourth from the left is the sum of the numbers in the four squares to its left. What number should Ali write in the final square?
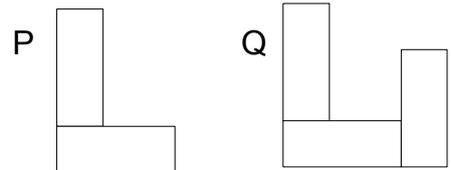
Question 7

The diagram shows a pattern of 16 circles inside a square.
The central circle passes through the points where the
other circles touch. The circles divide the square into regions.
How many regions are there?

Question 8

How many pairs of digits (p, q) are there so that the five-digit integer '$p869q$' is a multiple of 15?
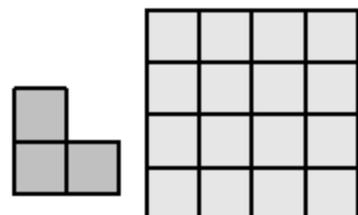
Question 9

The shapes P and Q are formed from two and three identical rectangles respectively. Their perimeters are 58 cm and 85 cm respectively.
What is the perimeter of one of the rectangles?

P   Q

Question 10

Susan places copies of the L-shape shown on a 4 x 4

board so that each L-shape covers exactly three cells

of the board. She is allowed to turn around or turn over

an L-shape. What is the largest number of L-shapes

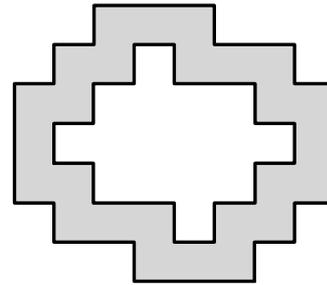she can place on the board without overlaps?

Question 11

Which of the following is the longest period of time?
3002 hours
125 days
17.5 weeks
4 months
1/3 of a year.

Question 12

In the diagram shown, all the angles are right angles
and all the sides are of length 1 unit, 2 units or 3 units.
What, in square units, is the area of the shaded region?

Question 13

Nicky has to choose 7 different positive whole numbers whose mean is 7.
What is the largest possible number she could choose?

Question 14

The diagram shows 7 identical coins which fit exactly inside a wooden frame. As a result each coin is prevented from sliding. What is the largest number of coins that may be removed one by one so that at, at each stage, each remaining coin is still unable to slide?
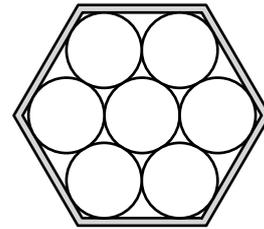
Question 15

Each block shown in this tower is to have a number displayed on it. Some are already done. For each block above the bottom row, the number on it should be the sum of the numbers on the two blocks it stands upon.
What number should replace *n*?
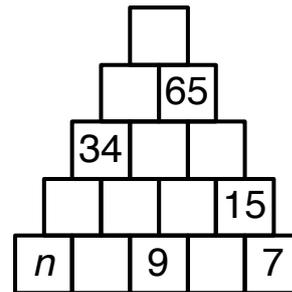
Question 16

In the rules of Association Football, Law 1 states that the field of play must be rectangular and have length from 100 to 130 yards, and width from 50 to 100 yards. What is the difference in area between the smallest possible field of play and the largest possible field of play?

Question 17

What is the simplest form of this fraction?

$$\frac{5796}{23184}$$

Question 18

A shape consisting of a number of regular hexagons is made by continuing to the right the pattern shown in the diagram, with each extra hexagon sharing one side with the preceding one. Each hexagon has a side length of 1 cm. How many hexagons are required for the perimeter of the whole shape to have length 2010 cm?
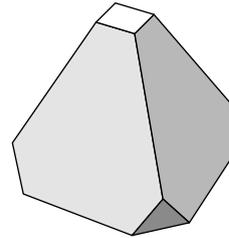
Question 19

Peg has six times as much chocolate as Reg. Meg has twice as much chocolate as Reg. Peg has how many times as much chocolate as Meg?

Question 20

A solid square-based pyramid has all of its corners cut off as shown.
How many edges does the resulting shape have?
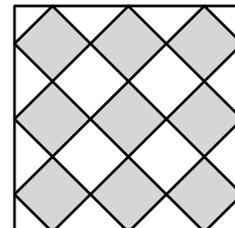
Question 21

The Kings of Clubs, Diamonds, Hearts and Spades, and their respective Queens, are having an arm wrestling competition. Everyone must wrestle everyone else, except that no King will wrestle his own Queen. How many wrestling bouts are there?

Question 22

If $a \times b = 2$, $b \times c = 24$, $c \times a = 3$ and a, b and c are all positive, what is the value of $a + b + c$?

Question 23

In the diagram, the small squares are all the same size.

What fraction of the large square is shaded?

Question 24

The six-member squad for the Ladybirds five-a-side team consists of a 2-spot ladybird, a 10-spot, a 14-spot, an 18-spot, a 24-spot and a pine ladybird (on the bench). The average number of spots for the members of the squad is 12. How many spots has the pine ladybird?

Question 25

I choose three numbers from this number square, including one number from each row and one number from each column.

I then multiply the three numbers together. What is the largest possible product?

1	2	3
4	5	6
7	8	9

Question 26

The parallelogram *WXYZ* shown has been divided into nine smaller parallelograms. The perimeters in centimetres of four of the smaller parallelograms are shown. The perimeter of *WXYZ* is 21 cm. What is the perimeter of the shaded parallelogram?