

Question 1:

A lighthouse flashes every 14 seconds and another nearby flashes every 16 seconds. The two lights flash together. How many seconds before they next flash together again?

Question 2:

Mr Welsh counted his class in groups of 4 and there were 2 left over. He then counted them in groups of 5 and there was 1 left over. If 15 of his class were girls and he had more girls than boys, how many boys were in his class?

Question 3:

What fraction is half way between $\frac{1}{5}$ and $\frac{13}{25}$?

Question 4:

The sum of ten numbers is 2624. If one of the ten numbers is changed from 456 to 654, what is the new sum?

Question 5:

What is the largest integer n for which $\frac{2n}{5} < \frac{19}{3}$?

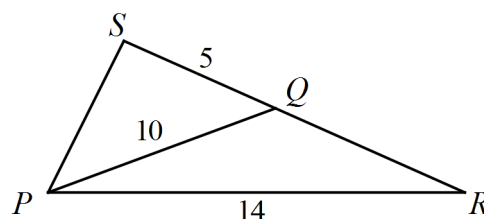
Question 6:

In 1988 Florence Griffith-Joyner set a world record for the women's 100 metre sprint of 10.49 seconds. What would her mean speed in kilometres per hour be?

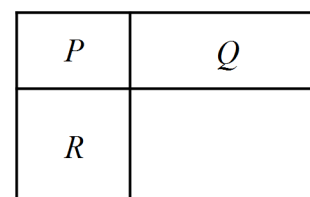
Question 7:

The triangle PQR has $PR = 14\text{cm}$ and $PQ = 10\text{cm}$. The side RQ produced meets the perpendicular PS at S , so that $QS = 5\text{cm}$.

What is the perimeter of the triangle PQR ?

**Question 8:**

A rectangle is divided into four smaller rectangles as shown in the figure. It is known that the areas of rectangles P, Q and R, in square centimetres, are 2, 4 and 6 respectively. What is the area, in square centimetres of the original rectangle?

**Question 9:**

If $\frac{a+b}{a-b} = \frac{7}{4}$, what is the value of $\frac{a^2}{b^2}$?

Question 10:

What is the last digit in the sum $3^{17} + 7^{13}$?

Question 11:

How many different isosceles triangles of perimeter 25 units can be formed with all sides a whole number of units?

Question 12:

In a group of 40 students, 20 play tennis, 19 play volleyball and 6 play both tennis and volleyball. How many students play neither tennis nor volleyball?

Question 1:

Students in a maths test can score 0, 1, 2 or 3 marks on each of six questions.
How many ways can a student score exactly 16 from the six questions?

Question 2:

How many numbers from 10 to 99 have the sum of their digits equal to 9?

Question 3:

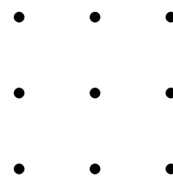
What is the angle the hour hand of a clock sweeps out during the 15 minutes of this part of the Mathswell competition?

Question 4:

A rectangle has an area of 600cm^2 and sides in centimetres which are multiples of 5. How many different rectangles satisfy this condition?

Question 5:

How many different straight lines can be drawn through two or more dots arranged in the square of dots as shown?



Question 6:

The manufacturer of the dry food my cat eats recommends that I feed her 1 cup (250ml) per day. The food comes in a rectangular box with base 18cm by 7cm and filled to a depth of 25cm. If I follow the manufacturers recommendation, how many days will the box of cat food last?

Question 7:

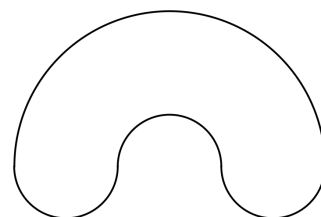
An equilateral triangle of side length 12 units is to be tiled with small equilateral triangular tiles of side length 1 unit. How many small tiles are needed?

Question 8:

How many integers greater than 10 and less than one hundred are increased by nine when their digits are reversed?

Question 9:

A go-kart track is made up of one large semicircle, and three smaller semicircles each of radius 100m, as shown. What is the total length, in metres, of the track?

**Question 10:**

There is a flu epidemic in the country of Miseramee. One month ago, 10% of the population had the disease and 90% were healthy. During the last month, 10% of the sick people recovered and 10% of the healthy people came down with the flu. What percentage of the population is currently healthy?

Question 11:

A group of students in Wellington organised a car-wash to raise funds. Some customers had a basic car-wash for \$5 each, while the rest had a vacuum-shine for \$7 each. A total of \$176 was raised. What is the minimum number of customers who purchased a car-wash?

Question 12:

A tangram puzzle is made by cutting a square into 5 triangles, one square and one parallelogram as shown. The original square has area of 1 square unit. What is the area of the parallelogram, in square units?

