YOUNG MASTER CHALLENGE

SAMPLE QUESTIONS FOR MATHEMATICS COMPETITION

AGE CATEGORY: FAIRY BEE (12-13 Years old)

Question 1 *(2 marks)*

Which of these is equal to one million millimetres?

a) 1 metre

b) 10 metres

c) 100 metres

d) 1 kilometres

Question 2 *(3 marks)*

The difference between $\frac{1}{3}$ of a number and $\frac{1}{4}$ of the same number is 4. What is that number?

a) 48

b) 36

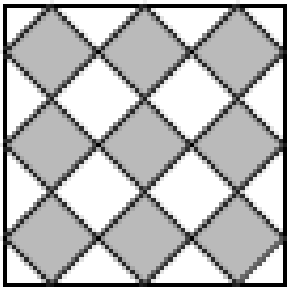
c) 24

d) 12

Question 3 (*2 marks*)

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

What fraction of the large square is shaded?



a) $\frac{9}{20}$

b) $\frac{9}{16}$

c) $\frac{3}{7}$

d) $\frac{1}{2}$

Question 4 *(3 marks)*

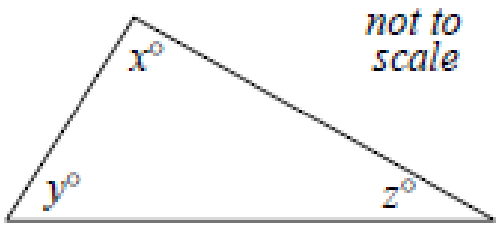
In the triangle, the mean of angles x and y is z. What is the value of z?

a) 50°

b) 60°

c) 70°

d) 80



Question 5 *(5 marks)*

In a sequence, each term is obtained by adding the previous three terms.
The first three terms are -4, 1, and 2.
What is the first term in the sequence that is greater than 100?

a) 10th term

b) 12th term

c) 13th term

d) 14th term

Question 6 *(5 marks)*

Six friends dine together at their local restaurant. Each friend follows a unique dining schedule: the first friend eats there daily, the second every other day, the third every third day, the fourth every fourth day, the fifth every fifth day, and the sixth every sixth day.
They decide to host a party each time they all dine together next.
How many days will it take for them to have the second party?

a) 60 days

b) 90 days

c) 120 days

d) 240 days

Question 7 *(3 marks)*

Sarah will be 101 years old tomorrow. In Sarah's lifetime, how many times has her age in years changed from a square number to a prime number?

a) 5

b) 4

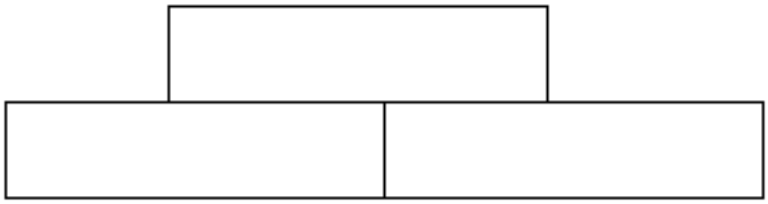
c) 3

d) 2

Question 8 *(3 marks)*

The shape is made up of three rectangles, each measuring 4 cm by 1 cm.

What is the perimeter of the shape?



a) 14 cm

b) 16 cm

c) 18 cm

d) 20 cm

Question 9 *(5 marks)*

What is the value of $A + B + C$?

a) 13

b) 14

c) 15

d) 16

$$\begin{array}{cccccc} & & A & B & A & B \\ & \times & & C & C & C \\ \hline 6 & 3 & 9 & 0 & 2 & 7 \end{array}$$

Question 10 *(5 marks)*

The points P, Q, R and S lie in order along a straight line, with $PQ = QR = RS = 4\,cm$. PQ, QR, RS and SP join to make the shape shown below.

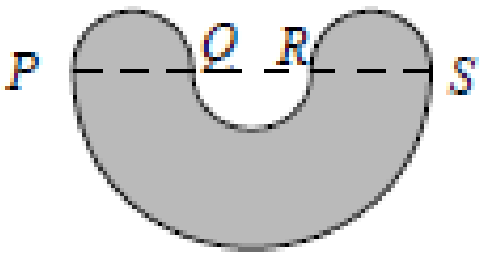
What, in cm^2, is the area of the shape?

a) 6π

b) 8π

c) 10π

d) 16π



Question 11 *(5 marks)*

When I have walked 10% of the way to school, I have 1800 metres more to walk than when I have 10% of the walk remaining.

How far, in metres, is it from my home to my school?

a) 1225
b) 1250
c) 2250
d) 2275

Question 12 *(2 marks)*

What is the value of 1 − 4 × 5 + 2 ÷ 5 ?

a) -18.6
b) -2.6
c) -15
d) -10