



# Maths Department

## Pre-test Practice **Mk 9**

Number logic, areas and perimeters, shapes, number sequences, ratio.

These questions are to be solved with logic and elegant solutions rather than brute force. You do not need any large scale arithmetic. **Do not use a calculator!**



Name: \_\_\_\_\_

Question 1

512 bottles each have a volume of 333 ml. What is the total volume of all the bottles together?

170.467 litres

170.496 litres

170.444 litres

170.964 litres

170.512 litres

Question 2

How many fifty pence pieces make up £208.50?

412

415

416

417

418

Question 3

Which of these IS a prime number?

1065

1089

1809

1069

5061

Question 4

If  $58 \times 37 = 2146$ , which is true, what is  $0.58 \times 37000$ ?

2146

21.46

21460

214600

0.2146

Question 5

What is the next number in the sequence?

1    1    2    3    5    8    13    21    34    \_\_\_\_\_

47

49

53

55

58

Question 6

What is the next number in the sequence?

289        256        225        196        169        \_\_\_\_\_

144

121

136

149

100

Question 7

What is a half of a quarter?

$\frac{1}{2}$

$\frac{1}{4}$

$\frac{1}{6}$

$\frac{1}{8}$

$\frac{1}{16}$

Question 8

What is  $12 \div \frac{1}{3}$ ?

4

6

9

24

36

Question 9

The dimensions of a rectangle are length 100 cm by a height of  $h$  cm. The area of the rectangle is  $3145 \text{ cm}^2$ . What is the value of  $h$ ?

$314500 \text{ cm}^2$

$314500 \text{ cm}^2$

$3145 \text{ cm}$

$0.3145 \text{ cm}$

$31.45 \text{ cm}$

Question 10

A rectangle has a perimeter of 50 cm, and a length of 21 cm.  
What is its area?

84 cm<sup>2</sup>

84 cm

25 cm<sup>2</sup>

25cm

1050 cm<sup>2</sup>

Question 11

A square has an area of 169 cm<sup>2</sup>. What is its perimeter?

52 cm

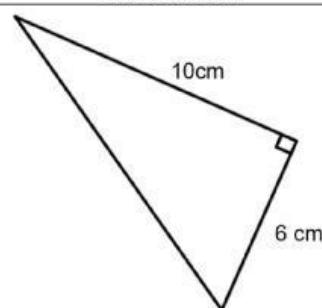
38,416 cm<sup>2</sup>

26 cm<sup>2</sup>

26 cm

13 cm

Question 12



What is the area of the triangle?

30 cm<sup>2</sup>

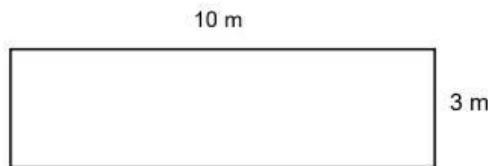
60cm<sup>2</sup>

15 cm<sup>2</sup>

30cm

60 cm

Question 13



A 10 m by 3 m patio is to be paved with stones that are 25 cm by 25 cm. How many stones are needed?

120 stones

480 stones

240 stones

4800 stones

24,000 stones

Question 14

Jim and Ted shared their winnings in a ratio of 5 : 7. Ted got £24 more than Jim. How much did Jim get? *Use the “method” perhaps?*

£60

£12

£24

£84

£144

Question 15

Bea and Henri share the driving in a ratio of 2 : 5. If Bea drives 240 km, how far did Henri drive?

110 km

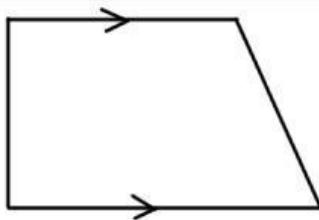
840 km

8400 km

600 km

6000 km

Question 16



What is the exact name of this shape?

The shape has not been drawn perfectly. You must decide its name based on the markings.

kite

quadrilateral

parallelogram

trapezium

rhombus

Question 17

How many lines of symmetry does a parallelogram have?

0

1

2

3

an infinite number

Question 18

How many lines of symmetry does a regular decagon have?

0

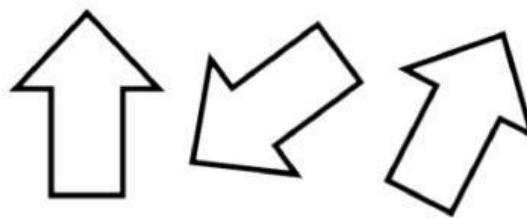
1

5

10

12

Question 19



What word best completes the sentence: the shapes shown  
are \_\_\_\_\_.

regular

congruent

obtuse

right angled

isosceles

Question 20

The perimeter of a regular nonagon is 63 cm. What is the  
length of one side of the nonagon?

4 cm

7 cm

9 cm<sup>2</sup>

12 cm

63 cm