



# Maths Department

## Pre-test Practice **Mk 8**

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

278 bags of sand each have a mass of 24 kg. What is the total mass of sand?

6672 kg

66,672 kg

660 kg

602 kg

6676 kg

Question 2

How many five pence pieces make up £20.55?

2200

220

385

411

4110

Question 3

Which of these IS a prime number?

6199

6129

6195

6201

6750

Question 4

If  $54 \times 46 = 2484$ , which it is, what is  $5.4 \times 46,000$ ?

24.84

248.4

2484

24840

248,400

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?

121    144    169    196    \_\_\_\_\_

225

201

199

216

256

Question 7

What is a half of a third?

$\frac{1}{2}$

$\frac{1}{4}$

$\frac{1}{6}$

$\frac{1}{8}$

$\frac{1}{16}$

Question 8

What is  $9 \div \frac{1}{3}$ ?

*In other words, how many times does one third fit into nine wholes?*

3

6

9

18

27

Question 9

The dimensions of a rectangle are 50 cm by 40 cm. What is the area of the rectangle?

200 cm<sup>2</sup>

2000 cm<sup>2</sup>

20,000 cm<sup>2</sup>

2000 cm

200 cm

Question 10

A rectangle has a perimeter of 40 cm, and a length of 12 cm.  
What is its area?

480  $\text{cm}^2$

96 cm

96  $\text{cm}^2$

480 cm

48  $\text{cm}^2$

Question 11

A square has an area of 225  $\text{cm}^2$ . What is its perimeter?

50,625 cm

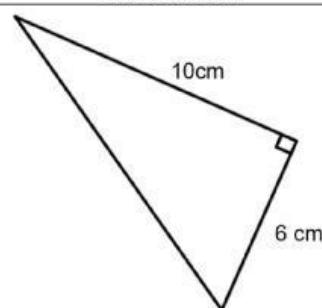
50,625  $\text{cm}^2$

60  $\text{cm}^2$

60 cm

15 cm

Question 12



What is the area of the triangle?

30  $\text{cm}^2$

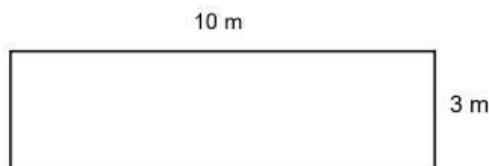
60  $\text{cm}^2$

15  $\text{cm}^2$

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

Ella and Ava shared M&Ms™ in a ratio of 4 : 1. If Ella got 18 **more than** Ava, how many did Ava get? *Use the "method" perhaps?*

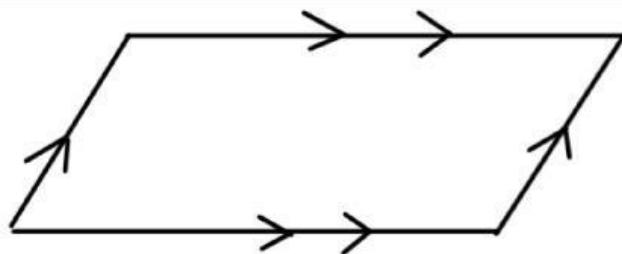
6      12      24      30      You can't tell

Question 15

Maria and Charlotte share the driving in a ratio of 3 : 5. If Maria drives 330 km, how far did Charlotte drive?

110 km      880 km      550 km      440 km      330 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 rhombus have?

0

1

2

3

an Infinite number

Question 18

How many lines of symmetry does a kite have?

0

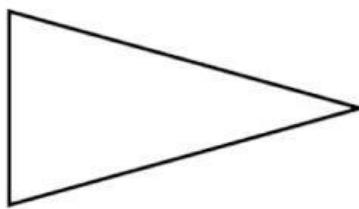
1

2

4

8

Question 19



What word best completes the sentence: the triangle shown is \_\_\_\_\_.

regular

congruent

obtuse

right angled

isosceles

Question 20

The perimeter of a regular octagon is 64 cm. What is the length of one side of the octagon?

4 cm

16 cm

$8 \text{ cm}^2$

8 cm

$16 \text{ cm}^2$