

NAME

Non-calculator

1 An art gallery hangs 7 small square pictures on a wall.

Each square picture has side length 11 cm.

a Write a calculation for the total area of the wall covered by pictures.

.....
(1 mark)

b Work out the area of the wall covered by pictures.

.....
(1 mark)

2 A flag flies at a height of 4.2 m.

The flag is lowered by 1.34 m, and then by a further 0.25 m.

Work out how high the flag flies now.

.....m
(2 marks)

3 What is the missing number in this calculation?

$$42 \div \square = -6$$

.....
(1 mark)

4 $3^3 + 5^2 = 2x$

Work out the value of x .

.....
(2 marks)

5 Work out

a $\sqrt{16 + 20}$

.....
(1 mark)

b $\frac{\sqrt[3]{125} + 10}{8 - 3}$

.....
(2 marks)

6 Mark says, '81 is a square number. Therefore, 810 is a square number.'

Is Mark correct? Explain your answer.

.....

(1 mark)

7 a Using $68 \times 19 = 1292$, write down a calculation that can be used to work out 33×38

(1 mark)

b Use your calculation to work out 33×38

.....
(1 mark)

8 Charity raffle tickets raise £5467.50

The tickets state that the money raised will be divided equally among 12 charities.

Explain why this is not possible.

Show working to support your answer.

.....
(2 marks)

9 $\sqrt{225} = \sqrt{a} \times \sqrt{b}$ where $a \neq b$ and where a and b are whole numbers.

Find a possible pair of values for a and b .

.....
(2 marks)



Calculator

10 A farmer buys a tractor costing £19 975

He pays a deposit of £5890 and then 25 monthly payments.

Work out the farmer's monthly payments.

£.....

(3 marks)

11 Anthony says the answer to $(-10)^3$ is 1000

Anthony is not correct.

Explain why.

.....

.....

(1 mark)

12 8 square vegetable beds have a total area of 11.52 m^2 .

Work out the side length of each vegetable bed.

.....m

(3 marks)

13 Work out $20 - (\sqrt[3]{1331} + 3.5)$

.....
(2 marks)

14 $800 = 2^5 \times 5^2$ when written as a product of its prime factors.

Write 1600 as a product of its prime factors, using index notation.

.....
(2 marks)

15 The approximate surface area of a cone is calculated using this formula

$$A = \frac{22}{7}r \left(r + \sqrt{r^2 + h^2} \right)$$

Work out the surface area, A , of a cone, when $r = 3$ and $h = 4$

Give your answer to 2 decimal places.

.....cm
(2 marks)

Overall mark	/30
--------------	-----