JUNE ... A LITTLE BIT OF MATHS EVERY DAY

JustMaths

1

Simplify

$6(x - 3) - 2(x - 2)$

$6x - 18 - 2x + 4$

$4x - 14$

2

Find the range:

12, 14, 11, 9, 13, 15, 17, 10, 12

$17 - 9 = 8$

3

What is the surface area of a cube with side length 6cm?

Iside = $36cm^2$

All faces = $216cm^2$

4

A water container has 19.5 litres of water in it.

A cup holds 210 ml of water.

How many cups of water can be filled from the water container?

92 cups ✓

93 ✗ not enough

5

Find the product of the sixth prime number and the third triangular number.

2, 3, 5, 7, 11, (13)

1, 3, (6)

78

6

A box is on a table.

The area of the box in contact with the table is 1500 cm^2.

The pressure on the table is 28 newtons/m^2.

Work out the force exerted by the box on the table.

7

$0.15m^2$

4·2 Newtons

8

Factorise fully

$15xy^2 + 27x^2y + 9xy$

$3xy(5y + 9x + 3)$

$x^2 - 169$

$(x + 13)(x - 13)$

9

Work out the value of

$(3 \times 10^{-5}) \div (6 \times 10^{7})$

5×10^{-13}

10

Round 0.000608765 to three significant figures

0·000609

11

Town B is on bearing of 065° from Town A.

What is the bearing of Town A from Town B?

245°

12

Simplify fully

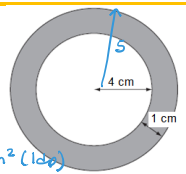
$$\frac{m^2 \times m^{-5}}{m^{-3}}$$

$2-5=-3$

$-3--3=0$

$m^0 = 1$

Work out the shaded area



$\pi \times 5^2 - \pi \times 4^2$

$25\pi - 16\pi = 9\pi$

$= 28.3cm^2$ (1dp)

15

What is the size of an interior angle of a pentagon?

5 sides

108°

16

Solve

$4x - 7 = 21$

$x = 7$

17

I invest £1200 in an account that pays compound interest of 1.5% per annum.

How much interest will I earn in 3 years?

£54·81

18

Write 185 as a product of its prime factors

5×37

19

Factorise

$x^2 - 7x + 12$

$(x - 3)(x - 4)$

20

Calculate:

$$\frac{2}{5} + \frac{3}{8}$$

$\frac{31}{40}$

21

Expand and simplify

$(2x - y)(3x + 2y)$

$6x^2 - xy - 2y^2$

$3y^2(2x - 3)$

$6xy^2 - 9y^2$

22

Change $4.2m^2$ into mm^2

$1m \times 4·2m = 4·2m^2$

$1000mm \times 4200mm$

$4,200,000mm^2$

23

What is the lowest common multiple of 8, 12 and 15?

120

24

The total cost of 3 pens and 4 pencils is £1.84

The total cost of 5 pens and 2 pencils is £1.76

Work out the cost of one pen and the cost of one pencil.

$3A + 4B = 1.84$

$5A + 2B = 1.76$

Pen = 24p

Pencil = 28p

25

26

A number "x", is rounded to 9.5 correct to 2 significant figures.

What is the error interval of x?

$9.45 \leq x < 9.55$

27

28

There are a total of 120 counters in a box. R = 90 B = 30

There are three times as many red counters as blue counters.

Vicky takes one third of the red counters from the box. 30

Oliver takes 80% of the blue counters from the box. 24

Work out the ratio of the number of red counters to the number of blue counters now in the box. R = 60 B = 6

10 : 1

29

Is 150 a term in the sequence?

$n^2 + 3$.

$n^2 + 3 = 150$

$n = 49$

yes, n is a whole number

30

Find the mean

12, 14, 11, 9, 13, 15, 17, 10, 12

$113 \div 9 = 12.\dot{5}$

REMEMBER: The best way to revise maths is to "do Maths"!