NOVEMBER ... A LITTLE BIT OF MATHS EVERY DAY

JustMaths

1 What is the gradient and intercept of the line?

$2y - 3x = 4$

gradient = $\frac{3}{2}$

intercept = 2

2 Which of these as a geometric sequence and which is an arithmetic sequence:

geometric 1, 3, 9, 27

2, 5, 8, 11 arithmetic

3 Solve:

$(x + 1)(x + 4) = (x - 2)(x - 3)$

$x^2 + 5x + 4 = x^2 - 5x + 6$

$10x = 2$

$x = \frac{2}{10} = \frac{1}{5}$

4 Without a calculator work out

6511 ÷ 17

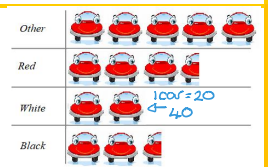
383

5 Calculate

$4\frac{5}{6} - 2\frac{1}{5}$ $\frac{79}{30}$

$2\frac{19}{30}$

6 The pictogram shows the number of cars in a car park. The total number of cars is 260 .. How many cars were white? 40



8 Write an expression for the perimeter of a rectangle with width $6x + 8$ and length $3x + 4$ and $8y$

$6x + 8y + 8$

9 Give your answer in standard form

$\frac{1.2 \times 10^7}{4 \times 10^4}$

3×10^2

10 Calculate:

$\frac{2}{7} \times \frac{7}{22}$ $\frac{1}{11}$

11 The exterior angles for an octagon adds up to ... ?

360°

12 Write 2.71×10^7 as an ordinary number

27,100000

13 Expand and simplify

$3a^2b(5b + 3a) + 4ab^2(5a - 3b)$

$15a^2b^2 + 9a^3b + 20a^2b^2 - 12ab^3$

$35a^2b^2 + 9a^3b - 12ab^3$

14 Work out

$24 - 3 \times 5 = 9$ (15)

$8 \times 4 + 2 = 34$ (32)

15 84 can be written as 2 x 2 x 3 x 7. Use this information to help you:

a) write 168 as a product of its prime factors.

$2^3 \times 3 \times 7$

b) write 672 using index notation $2^5 \times 3 \times 7$

16

17 By rounding, estimate the answer to the below:

$\frac{7 \times 40}{80 \div 20} = \frac{280}{4} = 70$

$\frac{7.17 \times 36.41}{82.71 \div 19.4}$

18 A car cost £17,500 three years ago.

The car depreciates at an average 7.5% per year.

How much is the car worth now?

£13850.43

19 True or False?

$a^8 + a^4 = a^2$

False, its a^6

20 5 pens and 3 pencils cost £1.50

6 pens and 5 pencils cost £2.15

How much does 1 pen cost and how much does 1 pencil cost?

Pen = 15p.

Pencil = 25p

21

22 The nth term of a sequence is given by 4n + 2.

Explain why 21 is not a term in this sequence.

$4n + 2 = 21$

$4n = 19$

$n = 19/4$

n would not be a whole number

23 £24

A bank is offering 2.4% simple interest or 2.3% compound interest. £23.26

Which is the better rate if you invested £500 over 2 years?

2.4% simple interest

24 Interior angles in a 9 sided polygon add up to ...?

3 sides = 180

4 sides = 360

5 sides = 540

6 sides = 720

8 sides = 900

9 sides = 1080°

25 Write each of the below as percentages:

$\frac{3}{20}$ 15% $\frac{14}{20}$ $\frac{28}{40}$ 70%

26 Ann, Bob and Cath share some money in the ratio 2:5:3 (A B C)

Cath gets £15 more than Ann

... how much did they share?

£150

27

28 Rebecca uses the digits 5, 4, 7 and 2 to make 4-digit numbers.

How many different 4-digit numbers can she make that are greater than 7000? 6

29 If it takes 3 people 8 hours to complete a task, how long would it take 4 people to complete the same task?

6 hours

30 Convert to a mixed number fraction

$\frac{21}{5}$ $4\frac{1}{5}$

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