A LITTLE BIT OF MATHS EVERY DAY ...

APRIL 2017

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

1 Three glasses of squash are made using cordial and water.
The different mixtures are
Glass A cordial : water = 3 : 22 $\frac{3}{25} = \frac{12}{100} = 12\%$
Glass B cordial = 1/8 of the total volume $\frac{1}{8} = 12.5\%$
Glass C Cordial = 12.75% of the total volume 12.75%
Which cup has the greatest proportion of cordial? C

3 Factorise fully
$y^2 + 27y$ $y(y+27)$
$x^2 - 16$ $(x+4)(x-4)$

4 Work out the value of
2×10^{-2}
$(6 \times 10^5) \div (3 \times 10^7)$

5 Solve
$5x^2 = 80$
$x = 4$

6 What is the square root of 100 Million?
10,000

7 Simplify fully
$\frac{m^{1.5} \times m^{-5}}{m^3}$
$m^{-3.5} / m^3 = m^{-6.5}$

8 Rachael took a maths test.
She scored 28 marks out of 40. $\frac{28}{40} \times 100 = 70\%$
David took an English test.
He scored 32 marks out of 47. $\frac{32}{47} \times 100$ 68.09%
To get an "A" 70% must be achieved. Did either of them get an "A"? Rachael did.

9

10 Mel says "when you square a number the answer will always be even".
Is Mel correct? Justify your answer
Mel is wrong. $3^2 = 9$ which is odd

11 Without a calculator or without doing the exact calculation, explain why the following is wrong:
$3.8 \times 5.4 = 183.2$
$4 \times 5 = 20$

12 I invest £140 in account that pays compound interest of 5% per annum. How much interest will I earn in 5 years?
£38.68

13 Write 64 as a product of its prime factors
$2 \times 2 \times 2 \times 2 \times 2 \times 2$
2^6

14 What is the value of n?
$2^2 \times 2^n = 2^{-3}$
$n = -5$

15 Alfie has 20 sweets. Ben also has 20 sweets.
Alfie gives Ben x sweets. $20 - x$ $20 + x$
Alfie then eats 5 of his sweets. $20 - x - 5$
Ben then eats half of his sweets. $\frac{20+x}{2}$
Write expressions for the number of sweets each of them has? $A = 15 - x$ $B = \frac{20+x}{2}$

16

17 72000 m/hour
1200 m/min
Change 72 km/h into m/s.
20 m/s

18 180g of copper is mixed with 105g of zinc to make an alloy.
The density of copper is 9 g/cm^3 and the density of zinc is 7 g/cm^3.
Work out the volume of copper used in the alloy. 20cm^3

19 Calculate:
$3\frac{3}{5} \div 2\frac{1}{7}$ $7\frac{5}{7}$

20 Expand and simplify
$(2x - 4)(x - 6)$
$2x^2 - 12x - 4x + 24$
$2x^2 - 16x + 24$
$7xy(2x - 3)$
$14x^2y - 21xy$

21 A number "x", is rounded to 8.4 correct to one decimal place.
What is the error interval of x?
$8.35 \leq x < 8.45$

22 Solve the simultaneous equations
1. $4x + y = 25$
2. $x - 3y = 16$ $\times 4$
3. $4x - 12y = 64$
4. $4x + y = 25$
3 − 4: $-13y = 39$ $y = -3$
$4x - 3 = 25$ $4x = 28$ $x = 7$
$x = 7$ $y = -3$

23

24 $1 + 2 + 3 + 4 = 10$
10 is not divisible by 4
Give an example to show that the sum of four consecutive integers is not always divisible by 4

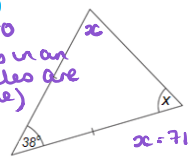
25 x and y are whole numbers.
$x > 50$ 51
$y < 40$ 39
Work out the smallest possible value of $x - y$
$51 - 39 = 12$

26 £225 = 12.5%
The cost of a weekly train ticket increases by 12.5% to £225
How much did weekly train ticket cost before this increase? £1800

27 17×22
There are 17 men and 22 women in a choir. One of the men and one of the women are going to be chosen sing the first song together.
How many different pairs *could* be chosen? 374

28 $3n + 5 = 21$
$3n = 26$ $n = \frac{26}{3} = 8\frac{2}{3}$
Explain why 21 is not a term in the sequence 3n + 5.
n is not a whole number.

29 $180 - 38 = 142$
angles in a triangle = 180
$142 \div 2 = 71°$ (2 angles in an isosceles are equal)
Giving reasons, calculate "x"



30 $x = 71$

D M V
Mass – 180g
Density – 9g/cm^3
Volume – 20cm^3
Copper Zinc Alloy
105g 285g
7g/cm^3

REMEMBER: THE BEST WAY TO REVISE MATHS IS TO "DO MATHS"!

$3\frac{3}{5} \div 2\frac{1}{7} = \frac{18}{5} \div \frac{15}{7} = \frac{18}{5} \times \frac{15}{7} = \frac{270}{35} = 7\frac{25}{35} = 7\frac{5}{7}$

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