RIGOUR

by cdmasterworks Ltd

Numeracy for Learning, Life and Work

January National Maths Calendar

#abitofmathseveryday

1 4 take-away coffees cost £9·80. How much for 7 take-away coffees?

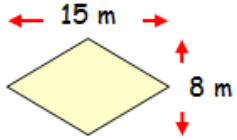
2 This £40 shirt has 15% off in the January sales. How much does it now cost?

3 Screws are manufactured that must have a tolerance of $(20 \pm 1{\cdot}5)$ mm. What are the minimum and maximum lengths of screws that are acceptable?

4 If $x = 3$ and $y = -2$ calculate :-

$$4x^2 - 5y$$

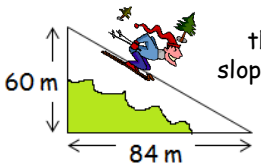
5 Calculate the area of this rhombus...



6 Solve the following equation...

$$3x - 12 = 8 - 2x$$

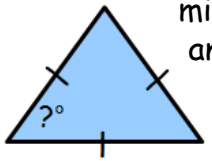
7 Calculate the gradient of this slope...



8 Calculate the median of the following data set...

5, -2, 7, -8, 3

9 Calculate the missing angle...



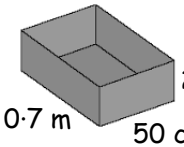
10 Jay cycled 11·4 miles in 1 hr 12 mins.

What was his average speed?

11 Multiply out the following brackets and simplify...

$$7(x + 3) - 2(3x - 5)$$

12 Calculate the volume of this storage box...



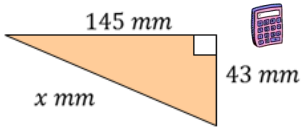
13 Carrie scored 68 out of 110 in her maths test and 49 out of 85 in her english exam. Which subject did she perform better in? Give a reason for your answer!

14 A standard pack of playing cards has 52 cards. What is the probability of choosing a queen at random?

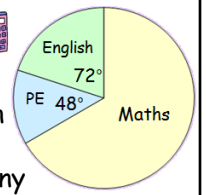
15 Factorise the following expression...

$$10k - 45$$

16 Calculate the length of the missing side. Round your answer to 1 d.p.

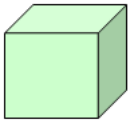


17 420 children asked. How many preferred maths?

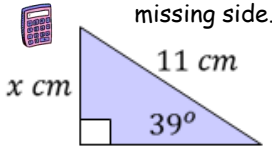


18 In a survey of 56 people, $\frac{7}{8}$'s of them were found to be right-handed. How many of them were right handed?

19 Calculate the surface area of this cube...



20 Calculate the length of the missing side...



21 It takes 2 men 9 hours to dig a hole. How long will it take 6 men at this rate?

22 Allan weighed 83 kg. As part of his new year's resolution he lost 0·32 kg followed by a further 1·098 kg. What does he now weigh?

23 How many 150 ml cups of water can be filled from a 4 litre water container?

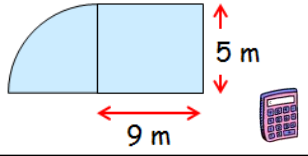
24 Exchange Rate:- £1 = €1·15

How many euros would I receive for £600?

25 Simplify the following expression...

$$7a + 2b + 3a - 6b$$

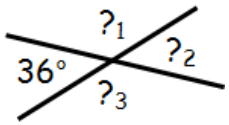
26 Calculate the area of this shape...



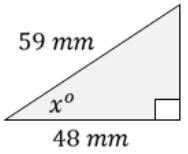
27 The velocity, v metres per second, at the top of a loop in a roller coaster is given by the formula $v = \sqrt{gr}$ where r metres is the radius of the loop. Calculate the value of v when $g = 8{\cdot}1$ and $r = 10$.

28 Last year, Bill's income was £23 800. This year his income increased to £25 942. Calculate this increase as a percentage of last year's income.

29 Calculate the missing angles...



30 Write a rule and complete the table...

no. of rings (R)	1	2	3	19	?
diamonds (D)	5	8	11	?	101

31 Calculate the size of the missing angle...