RIGOUR
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Numeracy for Learning, Life and Work

3rd Level
Number and Number Process
MNU 3-03b

Certificate
Bronze
Exercises | Homework | Homework Answers
Lifeskills | Assessments | Assessment Answers

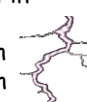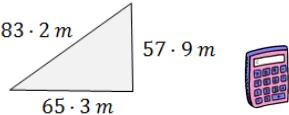# March National 5 Maths Calendar

#abitofmathseveryday

1 The speed of light is approximately $3 \cdot 8 \times 10^8$ metres per second. How far will light travel in 5476 seconds? Give your answer in Scientific Notation to 1 decimal place.
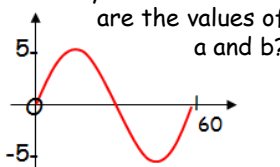
2 Determine whether this triangle is right-angled…

$83 \cdot 2\,m$, $57 \cdot 9\,m$, $65 \cdot 3\,m$

3 Determine the gradient and the y-intercept of the following equation…

$2y = x + 10$

4 Shown is the graph $y = a\sin bx°$. What are the values of a and b?

5 Calculate…

$1\frac{1}{2} + 2\frac{1}{3} \times \frac{1}{4}$

6 Solve the following inequality…

$\frac{x}{9} + \frac{x}{3} > 4$

7 Find the equation of the line passing through

$(-4, 3)$ and $(6, -7)$

8 What are the sizes of the interior and exterior angles?

REGULAR NONAGON

9 Solve the quadratic equation

$x^2 - 2x - 8 = 0$

10 Change the subject of the formula to c…

$b = \left(\frac{c}{a}\right)^2 + d$

11 Write the following in it's simplest index form…

$\frac{3k^{\frac{1}{3}} \times 4k^{\frac{11}{3}}}{2k}$
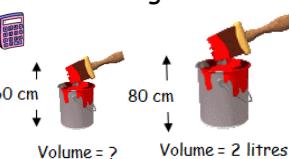
12 Write the following in the form…

$y = (x + a)^2 + b.$

$y = x^2 - 10x + 1$

13 Multiply out the following brackets and simplify…

$(3x - 7)(x^2 - 6x - 2)$

14 Calculate the missing volume…

60 cm, 80 cm, Volume = ?, Volume = 2 litres

15 Simplify…

$\sqrt{72} + \sqrt{2} + \sqrt{8}$

16 Evaluate…

$125^{\frac{2}{3}}$

17 Solve the following system of equations…
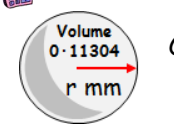
$7x + 3y = 25$
$3x + 2y = 5$

18 Simplify…

$\frac{x^2 - 64}{x^2 + 11x + 24}$

19 An industrial machine costs £128 600. It's value depreciates by 3·6% each year. How much is it worth after 3 years?

20 The volume of this sphere is 0·11304 mm³.

Volume 0·11304, r mm

Calculate it's radius…

21 A function is defined as
$f(t) = t^2 + 2$
For what value(s) of t does $f(t) = 18$?

22 Identify the y-intercept, the coordinates and nature of the turning point and the equation of the axis of symmetry.
$y = (x - 1)^2 + 2$

23 Solve the equation

$7 \sin x° + 2 = 0$

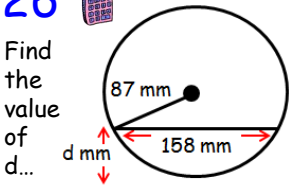for $0 \leq x \leq 360$.

24 Calculate the standard deviation of the following data set…

81, 82, 84, 88, 90

25 Express the following with a rational denominator and simplify if required…

$\frac{6}{\sqrt{14}}$

26 Find the value of d…

87 mm, 158 mm, d mm

27 Add the following fractions…
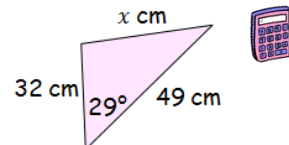
$\frac{7}{(x + 5)} - \frac{4}{(x - 2)}$

28 Factorise…

$3c^2 + 4c - 7$

29 This year, Sheryl paid £280 for her car insurance. This is an increase of 40% on last year's payment. How much did Sheryl pay last year?

30 Calculate the length of the missing side…

x cm, 32 cm, 29°, 49 cm

31 Vector **m** = $\begin{pmatrix} 3 \\ 1 \\ 7 \end{pmatrix}$

and vector **n** = $\begin{pmatrix} -2 \\ 0 \\ 5 \end{pmatrix}$.

Calculate $|3\mathbf{m} - 2\mathbf{n}|$.