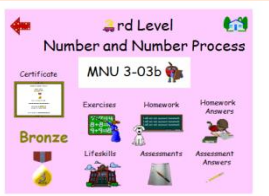
RIGOUR

by cdmasterworks Ltd

Numeracy for Learning, Life and Work



February National 5 Maths Calendar

#abitofmathseveryday

1 Simplify...

$\sqrt{5} + \sqrt{500} - \sqrt{45}$

2 Express these fractions in their simplest form...

$$\frac{(x-6)(x+18)}{(x-6)^3}$$

3 Write the following in the form...

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

$y = x^2 + 6x + 2$

4 Calculate...

$$3\frac{1}{3} \div 1\frac{4}{5}$$

5 A function is defined as

$f(x) = x^2 - 3x$

Find $f(-2)$.

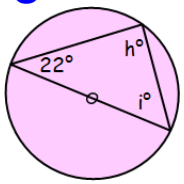
6 Factorise...

$64x^2 - 81y^2$

7 Change the subject of the formula to z...

$m = n + 4\sqrt{z}$

8 What are the sizes of the missing angles?



9 Solve

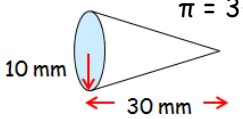
$x^2 + 7x + 3 = 0$

giving your solutions to 1 decimal place...

10 Express your answer with a positive power...

$x^3 \times (x^2)^{-4}$

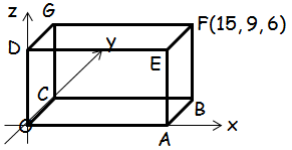
11 Calculate the volume of this cone. Use π = 3·14...



12 Subtract the following fractions...

$$\frac{9}{(x+3)} - \frac{5}{(x-8)}$$

13 Write down the coords of point G...

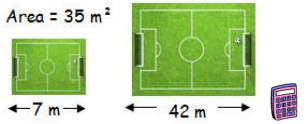


14 Dominic pays £79·20 for a Valentine's dinner. This includes a 10% service charge. How much did it cost for the meal?

15 Find the equation of the line passing through

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

16 The following pitches are mathematically similar. Calculate the missing area...



17 Multiply out the following brackets and simplify...

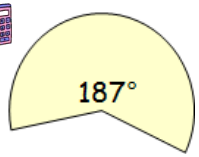
$(x - 6)(x^2 + 8x + 1)$

18 Solve the following system of equations...

$3x + 2y = 16$

$2x - 5y = 55$

19 The length of the arc is 75·03 m. Calculate the diameter...



20 Calculate the standard deviation of the following data set...

151, 152, 155, 158

21 The temperature in a room was 23°C. The temperature drops by 7% every hour. What will the room temperature be after 3 hours?

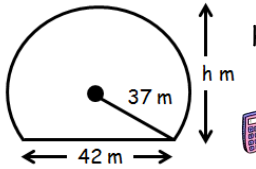
22 Solve the following equation...

$$\frac{x+5}{4} + \frac{x-7}{2} = 3$$

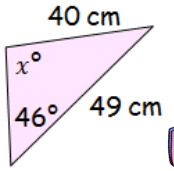
23 Determine the nature of the roots...

$2x^2 - 6x + 5 = 0$

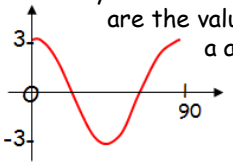
24 Find the value of h...



25 Calculate the size of the missing angle...



26 Shown is the graph y = acosbx°. What are the values of a and b?



27 Find the coordinates of the turning point of the parabola with equation...

$y = x^2 - 12x$

28 Solve the equation

$5 \cos x° - 3 = 1$

for $0 \leq x \leq 360$.