GCSE HIGHER · REVISION MAT 5

Using and rearranging formulae

1 $A = \pi r^2$

Find A when $r = 5$.

Leave your answer in terms of π.

2 Make x the subject of

$$y = \frac{x + 4}{5}$$

3 $T = 3n + 2$, where n is a whole number.

Explain why T cannot equal 60.

4 Density = mass ÷ volume.

A block measures 2 cm by 3 cm by 5 cm and has mass 81 g.

Find its density.

5 Show that making r the subject of

$$A = \pi r^2 + 10 \text{ (with } r > 0)$$

gives $r = \sqrt{\frac{A - 10}{\pi}}$.

6 Make a the subject of $c^2 = a^2 + b^2$.

Find a when $c = 13$ and $b = 5$.

7 Make y the subject of

$$\frac{1}{x} + \frac{1}{y} = \frac{1}{f}$$

8 Make x the subject of

$$y = \sqrt{\frac{x + 1}{x}}$$

Mr&Mrs MATHS

ANSWERS · REVISION MAT 5

Using and rearranging formulae

1 $A = 25\pi$

2 $5y = x + 4$

$x = 5y - 4$

3 $3n = 58$

58 is not a multiple of 3, so n is not whole.

4 Volume = 30 cm³

$\frac{81}{30}$

2.7 g/cm³

5 $A - 10 = \pi r^2$

$r = \sqrt{\frac{A - 10}{\pi}}$

6 $a = \sqrt{c^2 - b^2}$

$\sqrt{169 - 25} = \sqrt{144}$

$a = 12$

7 $\frac{1}{y} = \frac{1}{f} - \frac{1}{x} = \frac{x - f}{fx}$

$y = \frac{fx}{x - f}$

8 $y^2 = \frac{x + 1}{x}$

$xy^2 = x + 1$

$x(y^2 - 1) = 1$

$x = \frac{1}{y^2 - 1}$

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