GCSE HIGHER · REVISION MAT 2

# Using and rearranging formulae

**1** $P = 2l + 2w$

Find P when $l = 7.5$ and $w = 4$.

**2** Make $r$ the subject of

$$C = 2\pi r$$

**3** Is this rearrangement correct?

$$y = 5 - 2x \Rightarrow x = \frac{y - 5}{2}$$

Explain.

**4** Kinetic energy is $E = \frac{1}{2}mv^2$.

A 4 kg ball has 200 J of kinetic energy.

Find its speed.

**5** Show that making $b$ the subject of

$$a = \sqrt{b + c}$$

gives $b = a^2 - c$.

**6** The area of a trapezium is $A = \frac{1}{2}(a + b)h$.

$A = 54$, $a = 7$ and $h = 6$.

Find $b$.

**7** Make $x$ the subject of

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

**8** Make $r$ the subject of $V = \frac{4}{3}\pi r^3$.

Find $r$ when $V = 1000$, to 2 s.f.

Mr&Mrs MATHS

ANSWERS · REVISION MAT 2

# Using and rearranging formulae

**1** $15 + 8$

**P = 23**

**2** $r = \frac{C}{2\pi}$

**3** $2x = 5 - y$

**No:** $x = \frac{5 - y}{2}$

**4** $200 = 2v^2$

$v^2 = 100$

**$v$ = 10 m/s**

**5** $a^2 = b + c$

**$b = a^2 - c$**

**6** $54 = 3(7 + b)$

$18 = 7 + b$

**$b$ = 11**

**7** $xy - y = x + 2$

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

**$x = \frac{y + 2}{y - 1}$**

**8** $r = \sqrt[3]{\frac{3V}{4\pi}}$

$= \sqrt[3]{238.7...}$

**$r$ = 6.2**

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