GCSE HIGHER · REVISION MAT 1

Forming and solving equations

1 I think of a number,
multiply it by 4 and subtract 7.

The answer is 29.

What is my number?

2 The angles in a triangle are

$x°$, $2x°$ and $(x + 40)°$

Find the value of x.

3 Amy is 3 times as old as Ben.

In 5 years, the sum of
their ages will be 50.

Show that Ben is 10 now.

4 A rectangle's length is
5 cm more than its width.

Its perimeter is 46 cm.

Find the area of the rectangle.

5 The mean of these
four numbers is 11.

x, $x + 3$, $2x$, $3x - 1$

Find the largest of the numbers.

6 A rectangle measures

$(x + 4)$ cm by $(x - 1)$ cm

Its area is 36 cm^2.

Find its perimeter.

7 The product of two
consecutive odd numbers is 143.

Form and solve an equation
to find the two numbers.

8 A train travels 120 km at x km/h.

On the way back it goes 10 km/h
faster and takes 1 hour less.

Find the value of x.

Mr&Mrs MATHS

ANSWERS · REVISION MAT 1

Forming and solving equations

1 $4n - 7 = 29$

$4n = 36$

$n = 9$

2 $4x + 40 = 180$

$4x = 140$

$x = 35$

3 Ben b, Amy $3b$

$(b + 5) + (3b + 5) = 50$

$4b + 10 = 50$

$b = 10$

4 $2w + 2(w + 5) = 46$

$4w + 10 = 46 \Rightarrow w = 9$

9 cm by 14 cm

Area = 126 cm²

5 $x + x + 3 + 2x + 3x - 1 = 44$

$7x + 2 = 44 \Rightarrow x = 6$

Numbers: 6, 9, 12, 17

Largest = 17

6 $x^2 + 3x - 4 = 36$

$x^2 + 3x - 40 = 0$

$(x + 8)(x - 5) = 0 \Rightarrow x = 5$

9 cm by 4 cm

Perimeter = 26 cm

7 $n(n + 2) = 143$

$n^2 + 2n - 143 = 0$

$(n + 13)(n - 11) = 0$

11 and 13 (or −13 and −11)

8 $\frac{120}{x} - \frac{120}{x + 10} = 1$

$1200 = x(x + 10)$

$x^2 + 10x - 1200 = 0$

$(x + 40)(x - 30) = 0$

$x = 30$