GCSE HIGHER · REVISION MAT 5

Solving quadratic equations

1 Solve

$$(2x - 1)(x + 4) = 0$$

2 Solve

$$x^2 - 3x - 10 = 0$$

3 $x^2 + kx - 8 = 0$ has a solution $x = 2$.

Find the value of k.

4 Two positive numbers multiply to give 60.

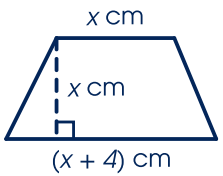
One number is 4 more than the other.

Find the two numbers.

5 Write $x^2 - 10x + 18$ in the form $(x - a)^2 - b$.

Hence solve $x^2 - 10x + 18 = 0$ exactly.

6 The area of this trapezium is 48 cm^2.



Find the value of x.

7 Show that the solutions of

$$5x^2 - 2x - 4 = 0$$

are 1.12 and –0.72, to 2 decimal places.

8 Solve

$$\frac{2}{x - 1} + \frac{3}{x + 1} = 1$$

ANSWERS · REVISION MAT 5

Solving quadratic equations

1 $x = \frac{1}{2}$ or $x = -4$

2 $(x - 5)(x + 2) = 0$

$x = 5$ or $x = -2$

3 $4 + 2k - 8 = 0$

$2k = 4$

$k = 2$

4 $x(x + 4) = 60$

$x^2 + 4x - 60 = 0$

$(x + 10)(x - 6) = 0$

6 and 10

5 $(x - 5)^2 - 25 + 18$

$= (x - 5)^2 - 7$

$x = 5 \pm \sqrt{7}$

6 $\frac{1}{2}(2x + 4)x = 48$

$x^2 + 2x - 48 = 0$

$(x + 8)(x - 6) = 0$

$x = 6$

7 $x = \frac{2 \pm \sqrt{4 + 80}}{10}$

$= \frac{2 \pm 9.165}{10}$

$x = 1.12$ or $x = -0.72$

8 $2(x + 1) + 3(x - 1) = x^2 - 1$

$5x - 1 = x^2 - 1$

$x^2 - 5x = 0$

$x = 0$ or $x = 5$

Mr&Mrs MATHS