

Solving Quadratics

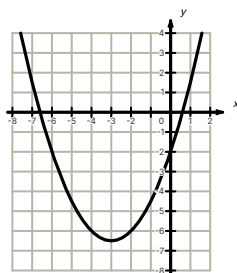
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NAME _____

DATE _____

- 1 Here is the graph of $y = 0.5x^2 + 3x - 2$

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Use the graph to estimate the solutions of $0.5x^2 + 3x - 2 = 0$

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

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- 3 $x = 3$ is a solution of the equation

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$$x^2 + x + c = 0$$

Work out the value of c .

- 4 The solutions of the equation

 EITHER PAPER 3 MARKS

$$x^2 + bx + c = 0$$

are $x = -6$ and $x = -9$.

Work out the value of b and the value of c .

- 5 The diagram shows the plan of the floor of an L-shaped room. All lengths are in metres.

EITHER PAPER 5 MARKS

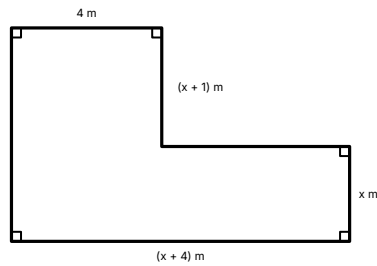


Diagram NOT accurately drawn

The area of the floor is 244 m^2 .

- (a) Show that $x^2 + 8x - 240 = 0$
(b) By factorising $x^2 + 8x - 240$, work out the value of x . You must show your working.

- 6 Leila is asked to solve $4t^2 - 17t + 15 = 0$

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Here is her working and answer.

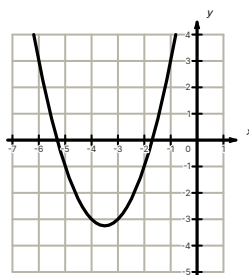
$$(t - 3)(4t - 5) = 0$$

$$t = -3 \text{ or } t = \frac{5}{4}$$

- (a) What mistake has Leila made?
(b) Work out the correct solutions of the equation.

- 7 Here is the graph of $y = x^2 + 7x + 9$

EITHER PAPER 2 MARKS



Use the graph to estimate the solutions of $x^2 + 7x + 9 = 0$

8 $x^2 - 11x + 18 = 0$

 EITHER PAPER 2 MARKS

Work out the values of x .

9 $x = 1$ is a solution of the equation

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

Calculate the value of c .

10 The solutions of the equation

 EITHER PAPER 3 MARKS

$$x^2 + bx + c = 0$$

are $x = -2$ and $x = 9$.

Work out the value of b and the value of c .

1	$x \approx -6.6$ and $x \approx 0.6$	2	$x = -5$ or $x = -1$
3	-12	4	$b = 15$ and $c = 54$
5	(a) $x(x + 4) + 4(x + 1) = 244$, so $x^2 + 8x - 240 = 0$ (b) 12 m	6	(a) Leila got the sign of the root wrong in the bracket with just t. The bracket that Leila solved to get $t = -3$ gives $t = 3$. (b) $t = \frac{5}{4}$ or $t = 3$
7	$x \approx -5.3$ and $x \approx -1.7$	8	$x = 2$ or $x = 9$
9	5	10	$b = -7$ and $c = -18$