Solving Quadratics by Factorising

Year 10–11 Maths · Years 10–11 · NCEA Level 1 · About 25 minutes · 8 questions

Name _____ Date _____ Score / 8

WHAT YOU WILL PRACTISE

- Factorise a quadratic and solve it equal to zero
- Recognise the difference of two squares and a common factor of x
- Rearrange an equation into the form $ax^2 + bx + c = 0$ before solving

WORKED EXAMPLE

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

1. Find two numbers that multiply to -10 and add to -3: these are -5 and 2.
2. Factorise: $(x - 5)(x + 2) = 0$.
3. Set each bracket equal to zero: $x - 5 = 0$ or $x + 2 = 0$.
4. Solve each one: $x = 5$ or $x = -2$.

Answer: $x = 5$ or $x = -2$

Questions

Show your working in the space under each question.

1. Solve $x^2 + 5x + 6 = 0$

2. Solve $x^2 - 7x + 10 = 0$

3. Solve $x^2 + 2x - 8 = 0$

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4. Solve $x^2 - 9 = 0$

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

6. Solve $x^2 - x - 12 = 0$

7. Solve $2x^2 + 7x + 3 = 0$

8. Solve $x^2 + 3x = 10$

Answers: Solving Quadratics by Factorising

Mark your own work, then go back to any question you got wrong before reading the tutor tip.

Q	QUESTION	ANSWER
1	Solve $x^2 + 5x + 6 = 0$	**$x = -2$ or $x = -3$**
2	Solve $x^2 - 7x + 10 = 0$	**$x = 2$ or $x = 5$**
3	Solve $x^2 + 2x - 8 = 0$	**$x = 2$ or $x = -4$**
4	Solve $x^2 - 9 = 0$	**$x = 3$ or $x = -3$**
5	Solve $x^2 - 6x = 0$	**$x = 0$ or $x = 6$**
6	Solve $x^2 - x - 12 = 0$	**$x = 4$ or $x = -3$**
7	Solve $2x^2 + 7x + 3 = 0$	**$x = -\frac{1}{2}$ or $x = -3$**
8	Solve $x^2 + 3x = 10$	**$x = 2$ or $x = -5$**

TUTOR TIP

A quadratic almost always has two solutions. If you have written only one, go back and check the second bracket.

Stuck on a question? Work through it live with a tutor.

YFCampus offers one-to-one online Maths tutoring matched to your school curriculum. Book a free trial class at **www.yfcampus.com/nz**

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