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Solving Quadratics

Grade 5 topic · Foundation and Higher · Edexcel and AQA

How to use this pack
20 questions that get harder as you go. Foundation students: aim for Questions 1–15 (52 marks) and have a go at the rest. Higher students: complete all 20. Show your working on the lines and write your final answer on the answer line, then mark yourself with the answers at the back. Diagrams are not drawn accurately. Total: 77 marks.

Warm-up

1 Solve $x^2 - 15x + 54 = 0$. **[3 marks]**

Answer _____

2 Solve $x^2 + 14x + 45 = 0$. **[3 marks]**

Answer _____

3 Solve $x^2 + 2x - 35 = 0$. **[3 marks]**

Answer _____

4 Solve $x^2 + 16x + 63 = 0$. **[3 marks]**

Answer _____

5 Solve $x^2 - 36 = 0$. **[3 marks]**

Answer _____

Core

6 Solve $x^2 - 121 = 0$. **[3 marks]**

Answer _____

7 Solve $x^2 + 10x = 0$. **[3 marks]**

Answer _____

8 Solve $x^2 + 11x = 0$. **[3 marks]**

Answer _____

9 Solve $x^2 = 2x + 3$. **[4 marks]**

Answer _____

10 Solve $x^2 = -17x - 72$. **[4 marks]**

Answer _____

Stretch

11 Solve $3x^2 - 7x + 2 = 0$. **[4 marks]**

Answer _____

12 Solve $3x^2 + 11x + 6 = 0$. **[4 marks]**

Answer _____

13 Solve $3x^2 + 18x + 15 = 0$. **[4 marks]**

Answer _____

14 Solve $4x^2 - 23x + 15 = 0$. **[4 marks]**

Answer _____

15 Solve $2x^2 - 10x + 12 = 0$. **[4 marks]**

Answer _____

Challenge

16 A rectangle has width x cm and length (x + 3) cm. Its area is 28 cm². Work out the value of x. **[5 marks]**

Answer _____

17 The product of two consecutive positive integers is 42. Work out the two integers. **[5 marks]**

Answer _____

18 A number n satisfies $n^2 + 2n = 24$. Find the positive value of n. **[5 marks]**

Answer _____

19 The shorter sides of a right-angled triangle are x cm and (x + 1) cm. The hypotenuse is 5 cm. Work out the value of x. **[5 marks]**

Answer _____

20 Solve $(x + 3)(x - 8) = -24$. **[5 marks]**

Answer _____