Worked answers | Quadratics and Parabolas

Factorising monic quadratics

6 questions | 13 marks

Equivalent correct methods earn the corresponding marks.

1. Factorise $x^2 + 5x + 6$. [2 marks]

$2 + 3 = 5$ and $2 \times 3 = 6$.

Answer: $(x + 2)(x + 3)$

2. Factorise $x^2 - 8x + 15$. [2 marks]

$-3 - 5 = -8$ and $(-3)(-5) = 15$.

Answer: $(x - 3)(x - 5)$

3. Factorise $x^2 + 2x - 15$. [2 marks]

$5 - 3 = 2$ and $5(-3) = -15$.

Answer: $(x + 5)(x - 3)$

4. Factorise $x^2 - 4x - 21$. [2 marks]

$-7 + 3 = -4$ and $-7(3) = -21$.

Answer: $(x - 7)(x + 3)$

5. Factorise $x^2 - 16$. [2 marks]

The missing x coefficient is zero.

$-4 + 4 = 0$ and $(-4)(4) = -16$.

Answer: $(x - 4)(x + 4)$

6. Alex writes $x^2 + 7x + 10 = (x + 1)(x + 10)$. Explain the error and correct it. [3 marks]

$1 + 10 = 11$, not 7.

$2 + 5 = 7$ and $2 \times 5 = 10$.

Answer: $(x + 2)(x + 5)$