

Quadratic Factorisation & Solving Worksheet

Quadratic Factorisation

1. $6x^2 - 13x - 5$. $(3x + 1)(2x - 5)$
2. $6x^2 - 11x - 2$. $(x - 2)(6x + 1)$
3. $4x^2 + 8x - 21$. $(2x + 7)(2x - 3)$
4. $16x^2 - 9$. $(4x - 3)(4x + 3)$
5. $8x^2 + 6x - 5$. $(4x + 5)(2x - 1)$
6. $10x^2 + 63x + 18$. $(10x + 3)(x + 6)$
7. $7x^2 - 14x$. $7x(x - 2)$
8. $6x^2 - 25x - 9$. $(3x + 1)(2x - 9)$

Harder Factorisation

1. $6x^2 + 11xy + 4y^2$. $(2x + y)(3x + 4y)$
2. $x^3 - x^2 - x - 2$. $(x^2 + x + 1)(x - 2)$
3. $4x^3 + 4x^2 - 5x - 3$. $(2x + 1)(2x + 3)(x - 1)$
4. $ab + 3ac + b^2 + bc - 6c^2$. $(a + b - 2c)(b + 3c)$
5. $x^4 + 2x^3 + 4x^2 + 2x + 3$. $(x^2 + 1)(x^2 + 2x + 3)$

Solving Equations

By putting the equations equal to zero and factorising, solve the following equations for x .

1. $x^2 + 3x + 2 = 0$. $x = -1$ or $x = -2$
2. $2x^2 + 7x = 4$. $x = \frac{1}{2}$ or $x = -4$
3. $10x^2 + 20x = 150$. $x = 3$ or $x = -5$
4. $2x^2 = x$. $x = 0$ or $x = \frac{1}{2}$
5. $4x^2 = 9$. $x = \frac{3}{2}$ or $x = -\frac{3}{2}$
6. $x - 100x^2 = x - 1$. $x = \frac{1}{10}$ or $x = -\frac{1}{10}$
7. $28x^2 + 1 = 13x + 7$. $x = -\frac{2}{7}$ or $x = \frac{3}{4}$