Solving quadratics

Mana Maths

Te reo Māori terms

whārite pūrua
quadratic equation
Open in Te Aka

whakatauwehe
factorise
Open in Te Aka

pūtakerua
root
Open in Te Aka

kīanga
expression
Open in Te Aka

Solving quadratics — Foundation

Solve each equation.

1. $x^2 + 5x + 6 = 0$ **2.** $x^2 + 7x + 12 = 0$ **3.** $x^2 - 5x + 6 = 0$ **4.** $x^2 - 9x + 20 = 0$

5. $a^2 + 3a + 2 = 0$ **6.** $a^2 - 4a + 3 = 0$ **7.** $y^2 + y - 12 = 0$ **8.** $y^2 - y - 6 = 0$

9. $m^2 + 8m + 15 = 0$ **10.** $m^2 - 2m - 15 = 0$ **11.** $p^2 = (5p) - 6$ **12.** $q^2 + 2q = 15$

13. $(r+4)(r-1)=0$ **14.** $(t-6)(t+2)=0$

Solving quadratics — Proficient

Solve each equation.

1. $x^2 + x - 20 = 0$

2. $x^2 - 11x + 24 = 0$

3. $x^2 - 3x - 28 = 0$

4. $x^2 + 9x + 14 = 0$

5. $a^2 + 6a - 16 = 0$

6. $a^2 - 7a + 10 = 0$

7. $b^2 + 2b = 35$

8. $b^2 - 8b = -12$

9. $y(y + 9) = 22$

10. $m(m - 4) = 32$

11. $(p + 7)(p - 3) = 0$

12. $(q - 5)(q - 1) = 0$

Solving quadratics — Excellence

Solve each equation.

1. $2x^2 + 7x + 3 = 0$

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

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

4. $3x^2 - 13x + 4 = 0$

5. $4a^2 - 4a - 15 = 0$

6. $5a^2 + 11a + 2 = 0$

7. $2y^2 + 5y = 3$

8. $3y^2 - y = 4$

9. $6m^2 + m - 2 = 0$

10. $2p^2 - 8p = 0$

11. $q^2 - 16 = 0$

12. $9r^2 - 25 = 0$

13. Other root of $x^2 - 7x + 10 = 0$ if one root is 2.

14. Make a quadratic with roots 3 and -4.

15. Which has roots -6 and 2: $x^2 + 4x - 12 = 0$ or $x^2 - 4x - 12 = 0$?

16. Why does $(x - 5)^2 = 0$ give one distinct root?