

Using the quadratic formula: questions

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Summary

A selection of questions on using the quadratic formula.

Before attempting these questions, it is recommended that you read (Guide: Using the quadratic formula).

Questions

Q1

Using the quadratic formula or otherwise, solve the following quadratic equations.

1.1. $x^2 - 7x + 6 = 0$.

1.2. $x^2 + 14x + 45 = 0$.

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

1.4. $x^2 - x - 56 = 0$.

1.5. $s^2 + 4s + 4 = 0$.

1.6. $t^2 + 4t - 4 = 0$.

1.7. $m^2 - 144 = 0$.

1.8. $5c^2 - 25 + 30 = 0$.

1.9. $2n^2 + n + 1 = 0$.

1.10. $-3c^2 + 9c - 1 = 0$.

1.11. $\frac{x^2}{2} - \frac{7x}{2} + 3 = 0$.

1.12. $e^{2x} - 4e^x + 4 = 0$

1.13. $-9s^2 + 3s - 1 = 0$

1.14. $2e^{6x} + e^{3x} + 1 = 0$.

1.15. $\cos^2(x) + 4\cos(x) - 4 = 0$.

1.16. $8m^2 - 4m - 1 = 0$.

Q2

In [Questions: Introduction to quadratic equations](#), you saw that the following expressions are all quadratic equations in disguise. Solve these for the variable indicated.

2.1. $x = 1/x - 1$; solve for x .

2.2. $(y - 1)(y - 4) = -(y + 2)(y + 3)$; solve for y .

2.3. $4m(m + 1) + 6 = 5$; solve for m .

2.4. $(t - 1)(t + 1) = -2$; solve for t .

2.5. $\frac{x - 1}{x - 2} = 5x$; solve for x .

2.6. $\frac{e^x - e^{-x}}{2} = 1$; solve for x (you may need [Guide: Logarithms.](#))