Questions: Using the quadratic formula

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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.

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

2.6. $\dfrac{e^x - e^{-x}}{2} = 1$; solve for x (you may need Guide: Introduction to logarithms to express your answers.)

After attempting the questions above, please click this link to find the answers.

Version history and licensing

v1.0: initial version created 04/23 by tdhc.

- v1.1: edited 05/24 by tdhc.