

# Questions: Using the quadratic formula

Tom Coleman

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

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

[This work is licensed under CC BY-NC-SA 4.0.](#)