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*](../studyguides/quadraticformula.qmd)*.*

## 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}\left(x\right)+4cos\left(x\right)−4=0$.

1.16. $ 8m^{2}−4m−1=0$.

## Q2

In [Questions: Introduction to quadratic equations](qs-introtoquadratics.qmd), 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. $ \left(y−1\right)\left(y−4\right)=−\left(y+2\right)\left(y+3\right)$; solve for $y$.

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

2.4. $ \left(t−1\right)\left(t+1\right)=−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](../studyguides/logarithms.qmd) to express your answers.)

[After attempting the questions above, please click this link to find the answers.](../answers/as-quadraticformula.qmd)

## Version history and licensing

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

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