

Solve Quadratics

Solve the following equations. Show your work.

a) $x^2 - 11x + 19 = -5$

b) $7x^2 + x = 0$

c) $7r^2 - 14r = -7$

d) $2d^2 + 5d - 12 = 0$

e) $3d^2 + d - 10 = 0$

e) $x^2 - 9 = 0$

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Solve the following equations. Show your work.

a) $x^2 - 11x + 19 = -5$

$$\begin{aligned}x^2 - 11x + 19 &= -5 \\x^2 - 11x + 24 &= 0 \\(x - 3)(x - 8) &= 0 \\x &= 3 \text{ or } 8\end{aligned}$$

b) $7x^2 + x = 0$

$$\begin{aligned}7x^2 + x &= 0 \\x(7x + 1) &= 0 \\x &= 0 \text{ or } -\frac{1}{7}\end{aligned}$$

c) $7r^2 - 14r = -7$

$$\begin{aligned}7r^2 - 14r &= -7 \\7r^2 - 14r + 7 &= 0 \\7(r^2 - 2r + 1) &= 0 \\7(r - 1)(r - 1) &= 0 \\or 7(r - 1)^2 &= 0 \\r &= 1\end{aligned}$$

d) $2d^2 + 5d - 12 = 0$

$$\begin{aligned}2d^2 - 3d + 8d - 12 &= 0. \\d(2d - 3) + 4(2d - 3) &= 0. \\(2d - 3)(d + 4) &= 0. \\d &= -4 \text{ or } \frac{3}{2}.\end{aligned}$$

e) $3d^2 + d - 10 = 0$

$$\begin{aligned}(3d - 5)(d + 2) &= 0 \\d &= \frac{5}{3} \text{ or } -2.\end{aligned}$$

e) $x^2 - 9 = 0$

$$\begin{aligned}(x + 3)(x - 3) &= 0 \\x &= -3 \text{ or } 3\end{aligned}$$