

Name: _____

Solving Quadratic Equations: Completing the Square

Solve each equation by completing the square.

① $x^2 + 18x + 56 = 0$

② $x^2 + 14x = 51$

③ $4x^2 - 12x - 4 = 12$

④ $3x^2 - x - 3 = 0$

⑤ $-x^2 + 3x - 5 = 0$

⑥ $3x^2 - 2x + 7 = 0$

⑦ $x^2 - x + 41 = 0$

⑧ $x^2 - 5x + 25 = 3$

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Solving Quadratic Equations: Completing the Square

Answers

① $x^2 + 18x + 56 = 0$

$(-4, -14)$

② $x^2 + 14x = 51$

$(3, -17)$

③ $4x^2 - 12x - 4 = 12$

$(-1, 4)$

④ $3x^2 - x - 3 = 0$

$\left(\frac{1 + \sqrt{37}}{6}, \frac{1 - \sqrt{37}}{6}\right)$

⑤ $-x^2 + 3x - 5 = 0$

$\left(\frac{3}{2} + \frac{i\sqrt{11}}{2}, \frac{3}{2} - \frac{i\sqrt{11}}{2}\right)$

⑥ $3x^2 - 2x + 7 = 0$

$\left(\frac{1 + 2i\sqrt{5}}{3}, \frac{1 - 2i\sqrt{5}}{3}\right)$

⑦ $x^2 - x + 41 = 0$

$\left(\frac{1 + i\sqrt{163}}{2}, \frac{1 - i\sqrt{163}}{2}\right)$

⑧ $x^2 - 5x + 25 = 3$

$\left(\frac{5 + 3i\sqrt{7}}{3}, \frac{5 - 3i\sqrt{7}}{3}\right)$