

Name : _____

Completing the Square Practice Worksheet

Solve each equation by completing the square.

① $x^2 + 12x - 54 = 0$

② $g^2 - 4g + 1 = -5$

③ $f^2 - 8f + 15 = 0$

④ $5x^2 - 3x + 2 = 0$

⑤ $-3a^2 + 12a + 49 = -6a^2$

⑥ $b^2 + 7b - 33 = 0$

⑦ $k^2 - 12k + 23 = 0$

⑧ $x^2 + 8x - 9 = 0$

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Answers

① $x^2 + 12x - 54 = 0$

$(-6 + 3\sqrt{10}, -6 - 3\sqrt{10})$

② $g^2 - 4g + 1 = -5$

$(2 + i\sqrt{2}, 2 - i\sqrt{2})$

③ $f^2 - 8f + 15 = 0$

$(3, 5)$

④ $5x^2 - 3x + 2 = 0$

$\left(\frac{3}{10} + \frac{i\sqrt{31}}{10}, \frac{3}{10} - \frac{i\sqrt{31}}{10}\right)$

⑤ $-3a^2 + 12a + 49 = -6a^2$

$\left(\frac{-6 + i\sqrt{111}}{3}, \frac{-6 - i\sqrt{111}}{3}\right)$

⑥ $b^2 + 7b - 33 = 0$

$\left(\frac{-7 + \sqrt{181}}{2}, \frac{-7 - \sqrt{181}}{2}\right)$

⑦ $k^2 - 12k + 23 = 0$

$(6 + \sqrt{13}, 6 - \sqrt{13})$

⑧ $x^2 + 8x - 9 = 0$

$(1, -9)$