

Completing the Square Worksheet

Solve the following quadratic equations by completing the square.

1 $3x^2 - 18x - 12 = 0$

2 $x^2 + 16x - 32 = -7$

3 $x^2 - 12x + 23 = 0$

4 $9x^2 - 12x + 13 = 0$

5 $4x^2 + 11x = 15$

6 $x^2 + 2x + 20 = 0$

7 $-2x^2 + 8x - 18 = 0$

8 $x^2 + 6x - 59 = 0$

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Answers

1 $3x^2 - 18x - 12 = 0$

$(3 + \sqrt{13}, 3 - \sqrt{13})$

2 $x^2 + 16x - 32 = -7$

$(-8 + \sqrt{89}, -8 - \sqrt{89})$

3 $x^2 - 12x + 23 = 0$

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

4 $9x^2 - 12x + 13 = 0$

$(\frac{2}{3} + i, \frac{2}{3} - i)$

5 $4x^2 + 11x = 15$

$(1, -3\frac{3}{4})$

6 $x^2 + 2x + 20 = 0$

$(-1 + i\sqrt{19}, -1 - i\sqrt{19})$

7 $-2x^2 + 8x - 18 = 0$

$(2 + i\sqrt{5}, 2 - i\sqrt{5})$

8 $x^2 + 6x - 59 = 0$

$(-3 + 2\sqrt{17}, -3 - 2\sqrt{17})$