

## Completing the Square

Date \_\_\_\_\_ Period \_\_\_\_\_

**Solve each equation by completing the square.**

1)  $b^2 - 14b + 24 = 0$

2)  $x^2 - 6x + 89 = 0$

3)  $b^2 - 2b - 80 = 0$

4)  $b^2 - 10b + 75 = 0$

5)  $6x^2 - 12x + 54 = 9$

6)  $7n^2 + 14n - 108 = -10$

7)  $3v^2 - 12v + 14 = 5$

8)  $3k^2 - 18k + 19 = -5$

9)  $7k^2 - 2k + 28 = -3$

10)  $2k^2 - 6k + 40 = 6$

11)  $2n^2 - 7n + 17 = 5$

12)  $10x^2 - 9x - 8 = -10$

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Solve each equation by completing the square.

1)  $b^2 - 14b + 24 = 0$

$\{12, 2\}$

2)  $x^2 - 6x + 89 = 0$

$\{3 + 4i\sqrt{5}, 3 - 4i\sqrt{5}\}$

3)  $b^2 - 2b - 80 = 0$

$\{10, -8\}$

4)  $b^2 - 10b + 75 = 0$

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

5)  $6x^2 - 12x + 54 = 9$

$\left\{\frac{2 + i\sqrt{26}}{2}, \frac{2 - i\sqrt{26}}{2}\right\}$

6)  $7n^2 + 14n - 108 = -10$

$\{-1 + \sqrt{15}, -1 - \sqrt{15}\}$

7)  $3v^2 - 12v + 14 = 5$

$\{3, 1\}$

8)  $3k^2 - 18k + 19 = -5$

$\{4, 2\}$

9)  $7k^2 - 2k + 28 = -3$

$\left\{\frac{1 + 6i\sqrt{6}}{7}, \frac{1 - 6i\sqrt{6}}{7}\right\}$

10)  $2k^2 - 6k + 40 = 6$

$\left\{\frac{3 + i\sqrt{59}}{2}, \frac{3 - i\sqrt{59}}{2}\right\}$

11)  $2n^2 - 7n + 17 = 5$

$\left\{\frac{7 + i\sqrt{47}}{4}, \frac{7 - i\sqrt{47}}{4}\right\}$

12)  $10x^2 - 9x - 8 = -10$

$\left\{\frac{1}{2}, \frac{2}{5}\right\}$