Solving Quadratic Equations By Completing the Square

Date_____ Period____

Solve each equation by completing the square.

1) $p^2 + 14p - 38 = 0$

2) $v^2 + 6v - 59 = 0$

3) $a^2 + 14a - 51 = 0$

4) $x^2 - 12x + 11 = 0$

5) $x^2 + 6x + 8 = 0$

6) $n^2 - 2n - 3 = 0$

7) $x^2 + 14x - 15 = 0$

8) $k^2 - 12k + 23 = 0$

9) $r^2 - 4r - 91 = 7$

10) $x^2 - 10x + 26 = 8$

11) $k^2 - 4k + 1 = -5$

12) $b^2 + 2b = -20$

13) $v^2 - 6v = -91$

14) $n^2 = 18n + 40$

15) $5k^2 = 60 - 20k$

16) $6x^2 - 48 = -12x$

17) $8x^2 + 16x = 42$

18) $9n^2 + 79 = -18n$

19) $2a^2 = -6 + 8a$

20) $2x^2 - 5x + 67 = 0$

21) $4n^2 + 4n + 36 = 0$

22) $7k^2 - 16k + 100 = 0$

23) $10p^2 + 4p + 77 = 9$

24) $3x^2 = -4 + 8x$

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Date_____ Period____

Solve each equation by completing the square.

1) $p^2 + 14p - 38 = 0$

$\{-7 + \sqrt{87}, -7 - \sqrt{87}\}$

2) $v^2 + 6v - 59 = 0$

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

3) $a^2 + 14a - 51 = 0$

$\{3, -17\}$

4) $x^2 - 12x + 11 = 0$

$\{11, 1\}$

5) $x^2 + 6x + 8 = 0$

$\{-2, -4\}$

6) $n^2 - 2n - 3 = 0$

$\{3, -1\}$

7) $x^2 + 14x - 15 = 0$

$\{1, -15\}$

8) $k^2 - 12k + 23 = 0$

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

9) $r^2 - 4r - 91 = 7$

$\{2 + \sqrt{102}, 2 - \sqrt{102}\}$

10) $x^2 - 10x + 26 = 8$

$\{5 + \sqrt{7}, 5 - \sqrt{7}\}$

11) $k^2 - 4k + 1 = -5$

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

12) $b^2 + 2b = -20$

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

13) $v^2 - 6v = -91$

$\{3 + i\sqrt{82}, 3 - i\sqrt{82}\}$

14) $n^2 = 18n + 40$

$\{20, -2\}$

15) $5k^2 = 60 - 20k$

$\{2, -6\}$

16) $6x^2 - 48 = -12x$

$\{2, -4\}$

17) $8x^2 + 16x = 42$

$\left\{\frac{3}{2}, -\frac{7}{2}\right\}$

18) $9n^2 + 79 = -18n$

$\left\{\frac{-3 + i\sqrt{70}}{3}, \frac{-3 - i\sqrt{70}}{3}\right\}$

19) $2a^2 = -6 + 8a$

$\{3, 1\}$

20) $2x^2 - 5x + 67 = 0$

$\left\{\frac{5 + i\sqrt{511}}{4}, \frac{5 - i\sqrt{511}}{4}\right\}$

21) $4n^2 + 4n + 36 = 0$

$\left\{\frac{-1 + i\sqrt{35}}{2}, \frac{-1 - i\sqrt{35}}{2}\right\}$

22) $7k^2 - 16k + 100 = 0$

$\left\{\frac{8 + 2i\sqrt{159}}{7}, \frac{8 - 2i\sqrt{159}}{7}\right\}$

23) $10p^2 + 4p + 77 = 9$

$\left\{\frac{-1 + 13i}{5}, \frac{-1 - 13i}{5}\right\}$

24) $3x^2 = -4 + 8x$

$\left\{2, \frac{2}{3}\right\}$