Name_____

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

Name_____

Using the Quadratic Formula

Date_____ Period_____

Solve each equation with the quadratic formula.

1) $v^2 + 2v - 8 = 0$

2) $k^2 + 5k - 6 = 0$

3) $2v^2 - 5v + 3 = 0$

4) $2a^2 - a - 13 = 2$

5) $2n^2 - n - 4 = 2$

6) $b^2 - 4b - 14 = -2$

7) $8n^2 - 4n = 18$

8) $8a^2 + 6a = -5$

9) $10x^2 + 9 = x$

10) $n^2 = 9n - 20$

11) $3a^2 = 6a - 3$

12) $x^2 = -3x + 40$

13) $9x^2 - 11 = 6x$

14) $4a^2 - 8 = a$

15) $14m^2 + 1 = 6m^2 + 7m$

16) $4x^2 + 4x - 8 = 1$

Name_____

Understanding the Discriminant

Date_____ Period____

Find the value of the discriminant of each quadratic equation.

1) $6p^2 - 2p - 3 = 0$

2) $-2x^2 - x - 1 = 0$

3) $-4m^2 - 4m + 5 = 0$

4) $5b^2 + b - 2 = 0$

5) $r^2 + 5r + 2 = 0$

6) $2p^2 + 5p - 4 = 0$

Find the discriminant of each quadratic equation then state the number of real and imaginary solutions.

7) $9n^2 - 3n - 8 = -10$

8) $-2x^2 - 8x - 14 = -6$

9) $9m^2 + 6m + 6 = 5$

10) $4a^2 = 8a - 4$

11) $-9b^2 = -8b + 8$

12) $-x^2 - 9 = 6x$

13) $-4r^2 - 4r = 6$

14) $8b^2 - 6b + 3 = 5b^2$

Find the discriminant then state the number of rational, irrational, and imaginary solutions.

15) $-6x^2 - 6 = -7x - 9$

16) $4k^2 + 5k + 4 = -3k$

17) $-7n^2 + 16n = 8n$

18) $2x^2 = 10x + 5$

19) $-10n^2 - 3n - 9 = -2n$

20) $-9r^2 - 8r - 1 = r - r^2 - 9$

21) $-3p^2 + 10p + 5 = -8p^2$

22) $m^2 + 5m = 2m^2$

Critical thinking questions:

23) Write a quadratic equation that has two imaginary solutions.

24) In your own words explain why a quadratic equation can't have one imaginary solution.