

## Quadratic Roots Practice Quiz

Date \_\_\_\_\_ Section \_\_\_\_\_

**Solve for all real roots of the following four equations. You must use a DIFFERENT method of solving for each equation below. Choose from completing the square, factoring, quadratic formula and taking the square root of both sides.**

1)  $n^2 + 14n + 44 = 0$

2)  $5x^2 - 12 = -28x$

3)  $x^2 + 1 = 5$

4)  $7n^2 - 3n - 10 = 5n$

- 1) Find the discriminant of each quadratic equation.
- 2) State the number and type of roots that would result.
- 3) Don't SOLVE for the roots, but determine which "method" of solving you would use.

5)  $a^2 - 2a + 1 = 0$

6)  $-6n^2 + 4n + 1 = -7$

7)  $-4k^2 - 4 = -5k$

8)  $5b^2 - 4b - 5 = -4$

9)  $4x^2 - 4x = -1$

10)  $5b^2 + 5b + 2 = 0$

11)  $-9r^2 - 4r = -3$

12)  $8r^2 + 2r + 5 = 6$

**State and graph the solution set to the quadratic inequality below. Show a number line analysis to confirm your answer.**

13)  $x^2 - 3x - 10 > 0$

## Answers to Quadratic Roots Practice Quiz

- 1)  $\{-7 + \sqrt{5}, -7 - \sqrt{5}\}$       2)  $\left\{\frac{2}{5}, -6\right\}$       3)  $\{2, -2\}$
- 4)  $\left\{\frac{4 + \sqrt{86}}{7}, \frac{4 - \sqrt{86}}{7}\right\}$       5) 0; one rational solution      6) 208; two irrational solutions
- 7) -39; two imaginary solutions      8) 36; two rational solutions      9) 0; one rational solution
- 10) -15; two imaginary solutions      11) 124; two irrational solutions      12) 36; two rational solutions
- 13)  $x < -2$  or  $x > 5$