Name Date Class

Chapter 8: Quadratic Functions Review

1. What is the quadratic formula: $x= \\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$

Matching.

2. If $b^{2}-4ac>0$ then there are \_\_\_\_\_\_\_\_\_\_\_ solutions.

3. If $b^{2}-4ac=0$ then there are \_\_\_\_\_\_\_\_\_\_\_ solutions.

4. If $b^{2}-4ac<0$ then there are \_\_\_\_\_\_\_\_\_\_\_ solutions.

Simplify the radicals.

 $\sqrt{100}$ $\sqrt{\frac{8}{5}} $ $\sqrt{\frac{5}{6}}$ $\sqrt{12}$

**Identify the quadratic functions.**

$y^{2}+x=2$ $2x+y=4x-1$ $3x^{2}+4=-2x$

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| x | -2 | -1 | 0 | 1 | 2 |
| y | -2 | 0 | 4 | 9 | 15 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| x | -2 | -1 | 0 | 1 | 2 |
| y | 39 | 18 | 3 | -6 | -9 |

**Identify the axis of symmetry, vertex, zeros, domain and range of the following graph.**



Axis of symmetry: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vertex: \_\_\_\_\_\_\_\_

Zeros: \_\_\_\_\_\_\_\_\_

Domain: \_\_\_\_\_\_\_\_\_\_\_

Range: \_\_\_\_\_\_\_\_\_\_\_

**Identify the axis of symmetry, vertex, zeros, y-intercept, domain and range of the following graph.**



Axis of symmetry: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vertex: \_\_\_\_\_\_\_\_

Zeros: \_\_\_\_\_\_\_\_\_

y-intercept: \_\_\_\_\_\_\_\_\_

Domain: \_\_\_\_\_\_\_\_\_\_\_

Range: \_\_\_\_\_\_\_\_\_\_\_

 **Compare the graph of the following graph with the graph of f (x) = x 2.**

 $g\left(x\right)=6x^{2}$

$$p\left(x\right)=x^{2}-4$$

$$k\left(x\right)=\frac{1}{2}x^{2}+3$$

**Solve the following equations.**

$-3x\left(2x-1\right)=0$ $\left(x-2\right)\left(x+4\right)=0$ $x^{2}-5x+6=0$

$25x^{2}-16=0$ $x^{2}-2x-15=0$ $(x-1)^{2}=36$

**Solve using the quadratic formula. You must show your work to earn full credit.**

$$4x^{2}-4x-3=0$$

**Find the number of real solutions of the following equations using the discriminant.**

 $ 100x^{2}+49=0$ $x^{2}-2x-4=0$ $2x^{2}+3=2x$

**Graph the following function. Then identify the following: axis of symmetry, vertex, minimum or maximum, minimum or maximum value, zeros, y-intercept, domain, and range of the following function:**

$$y=x^{2}+14x+40$$

Axis of Symmetry: $x=\\_\\_\\_\\_\\_\\_\\_$

Vertex: \_\_\_\_\_\_\_\_\_

Circle One: Minimum or Maximum

Minimum or Maximum Value: \_\_\_\_\_

Zeros: $x=\\_\\_\\_\\_\\_\\_$, \_\_\_\_\_

y-intercept: \_\_\_\_\_\_

Domain:\_\_\_\_\_\_

Range: \_\_\_\_\_\_\_\_\_\_