

For the following Quadratic Equations Find the following Then Graph:

- Axis of Symmetry
- Vertex
- If it Opens Up or Down
- Is it a Max or Min
- What is the Domain
- What is the Range

1.  $y = x^2 + 8x + 12$

2.  $y = 3x^2 - 6x - 2$

3.  $y = -x^2 - 2x - 1$

4.  $y = -x^2 - 10x - 31$

5.  $y = 2x^2 - 4$

6.  $y = -2x^2 + 8x$

7. The height above water level of a bridge can be modeled by  $f(x) = -0.007x^2 + 0.84x + 0.8$ , where  $x$  is the distance in feet from where the arch support enters the water. Can a sailboat that is 24 feet tall pass under the bridge? Explain!!

8. The height of a small rise in a roller coaster track is modeled by  $f(x) = -0.07x^2 + 0.42x + 6.37$  where  $x$  is the distance in feet from a support pole at ground level. Find the height of the rise.

9. The height in feet above the ground of an arrow  $t$  seconds after it is shot can be modeled by  $y = -16t^2 + 63t + 4$ . Can the arrow pass over a tree that is 68 feet tall? Explain!!!

Factor Completely:

10.  $8x^2 - 4x - 4$

11.  $12x^2 - 8x + 1$

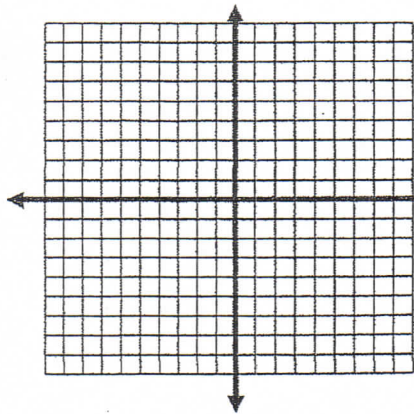
12.  $3x^2 - 19x + 20$

13.  $15x^2 + 4x - 3$

14.  $x^2 + x - 12$

15.  $x^2 + 5x - 6$

Name: \_\_\_\_\_



Axis of Symmetry: \_\_\_\_\_

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

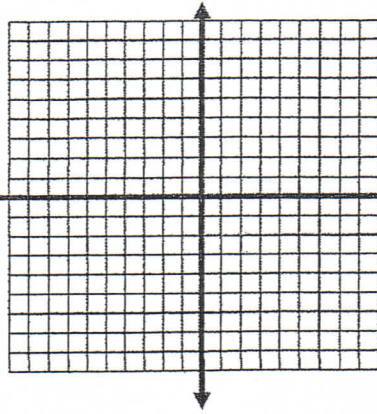
Zeros: \_\_\_\_\_

Opens Up or Down: \_\_\_\_\_

Max or Min: \_\_\_\_\_

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

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



Axis of Symmetry: \_\_\_\_\_

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

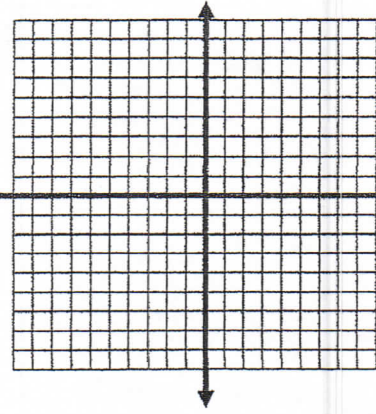
Zeros: \_\_\_\_\_

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Max or Min: \_\_\_\_\_

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

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



Axis of Symmetry: \_\_\_\_\_

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

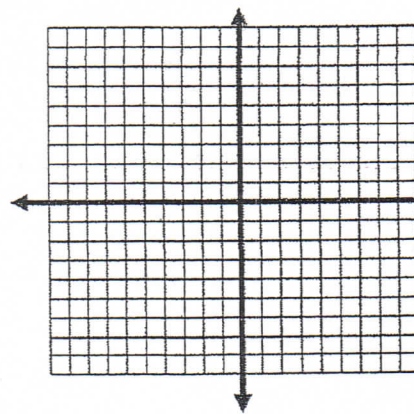
Zeros: \_\_\_\_\_

Opens Up or Down: \_\_\_\_\_

Max or Min: \_\_\_\_\_

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

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



Axis of Symmetry: \_\_\_\_\_

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

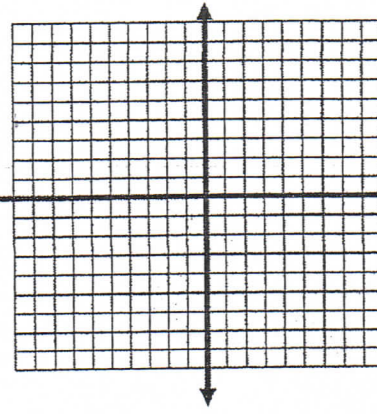
Zeros: \_\_\_\_\_

Opens Up or Down: \_\_\_\_\_

Max or Min: \_\_\_\_\_

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

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



Axis of Symmetry: \_\_\_\_\_

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

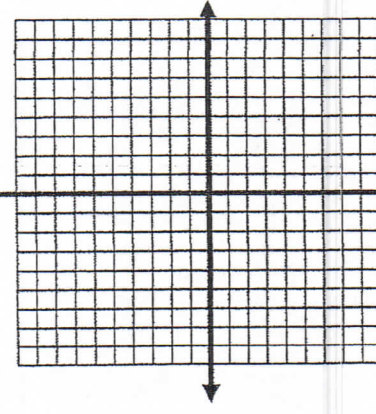
Zeros: \_\_\_\_\_

Opens Up or Down: \_\_\_\_\_

Max or Min: \_\_\_\_\_

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

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



Axis of Symmetry: \_\_\_\_\_

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

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

Opens Up or Down: \_\_\_\_\_

Max or Min: \_\_\_\_\_

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

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