**Practice – Parabolas**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_

1. Given the graph, write the equation of the parabola and find all the critical values.



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

Focus: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directrix: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

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

1. Given the graph, write the equation of the parabola and find all the critical values.



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

Focus: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directrix: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

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

Find the critical values for each parabola and then graph.

1. 

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

Value of *c*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Focus: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directrix: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

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

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

1. 

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

Value of *c*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Focus: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directrix: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

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

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

1. 

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

Value of *c*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Focus: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directrix: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

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

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

1. 

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

Value of *c*: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Focus: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directrix: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

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

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

1. The graph of is stretched by a scale factor of 4, translated right 6 units and down 3 units. Write the equation to represent the image of the graph after the translation in standard form.
2. Given the equation , write the equation if it is reflected over the *x*-axis and translated up 3 units and translated left 2 units.
3. Determine the following conic section line(s) of symmetry. 
4.  only
5.  only
6. 
7. Infinite lines of symmetry
8. Parabolas have which of the following characteristics?
9. Exactly 1 line of symmetry
10. Exactly 2 lines of symmetry
11. Created by the intersection of a cone and plane parallel to its base.
12. Created by the intersection of a cone and a plane perpendicular to its base.
13. I and III
14. II and III
15. I and IV
16. II and IV