

Name:

Date:

Period:

On a separate piece of paper, convert the Quadratic Equations below into vertex form. Use the new format to identify the Vertex and the Axis of Symmetry. Compare each function to the parent function and describe the transformation. You may use bullet points for the descriptions.

1. $y = x^2 + 4x - 1$

V: (,) Axis of Symmetry:

Description of Transformation:

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

V: (,) Axis of Symmetry:

Description of Transformation:

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

V: (,) Axis of Symmetry:

Description of Transformation:

4. $y = 2x^2 + 4x + 6$

V: (,) Axis of Symmetry:

Description of Transformation:

5. $y = 5x^2 - 40x + 72$

V: (,) Axis of Symmetry:

Description of Transformation:

6. $y = -x^2 + 6x - 4$

V: (,) Axis of Symmetry:

Description of Transformation:

7. $y = 3x^2 + 6x + 1$

V: (,) Axis of Symmetry:

Description of Transformation:

8. $y = -3x^2 - 18x - 20$

V: (,) Axis of Symmetry:

Description of Transformation:

9. $y = 8x^2 - 16x + 11$

V: (,) Axis of Symmetry:

Description of Transformation:

10. $y + 2x^2 = 4x + 5$

V: (,) Axis of Symmetry:

Description of Transformation:

In Exercises 11 and 12, determine whether the statement is *always*, *sometimes*, or *never* true. Explain your reasoning.

11. The graph of $g(x) = ax^2$ is wider than the graph of $f(x) = x^2$ when $a > 0$.

12. The graph of $g(x) = ax^2$ is more narrow than the graph of $f(x) = x^2$ when $|a| < 1$.