Name: Date: Period:

In problems 1 – 6, USE THE FORMULA to find the axis of symmetry and turning point algebraically, then determine whether the parabola opens upward or downward.

1. $y = x^2 - 9$

AOS: _____

Vertex: _____

Upward or Downward

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

AOS: _____

Vertex: _____

Upward or Downward

2. $y = -x^2 - 4x + 3$

AOS: _____

Vertex: _____

Upward or Downward

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

AOS: _____

Vertex: _____

Upward or Downward

3. $y = -3x^2 + 6x - 8$

AOS: _____

Vertex: _____

Upward or Downward

6. $y = -2x^2 + x - 5$

AOS: _____

Vertex: _____

Upward or Downward

In problems 1 – 4, graph the quadratic equations.

1. $y = 2x^2$ for $-2 \leq x \leq 2$

x	y

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

x	y

2. $y = -x^2$ for $-3 \leq x \leq 3$

x	y

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

x	y