Kuta Software - Infinite Algebra 2   Name_____

Properties of Parabolas

Date_____ Period_____

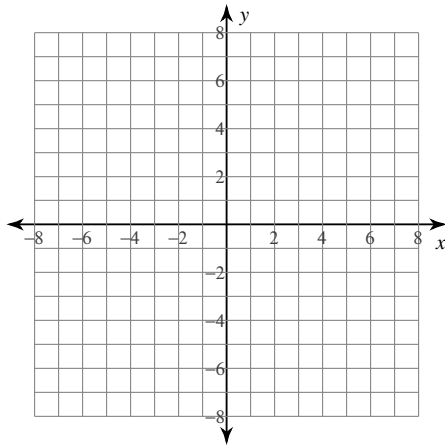**Identify the vertex of each.**

1) $y = x^2 + 16x + 64$

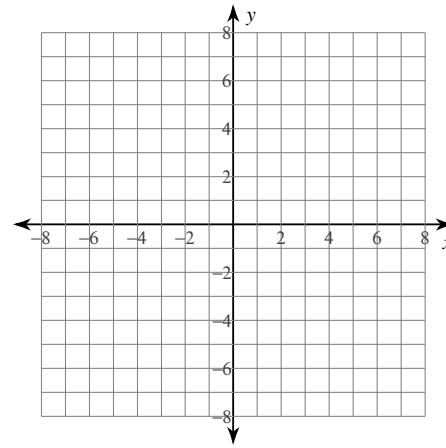2) $y = 2x^2 - 4x - 2$

3) $y = -x^2 + 18x - 75$

4) $y = -3x^2 + 12x - 10$
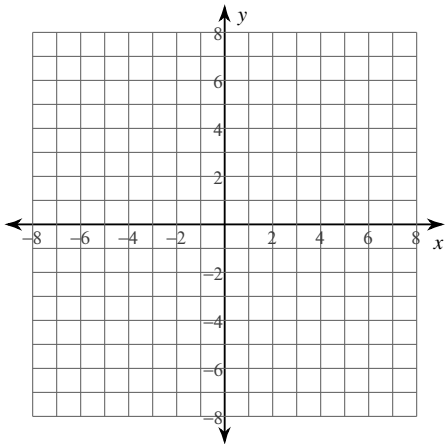
Graph each equation.
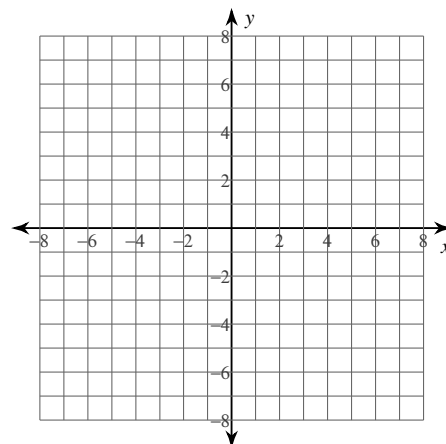
5) $y = x^2 - 2x - 3$

6) $y = -x^2 - 6x - 10$

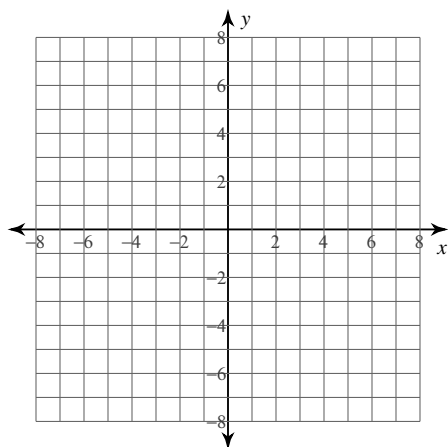**Identify the min/max value of each. Then sketch the graph.**
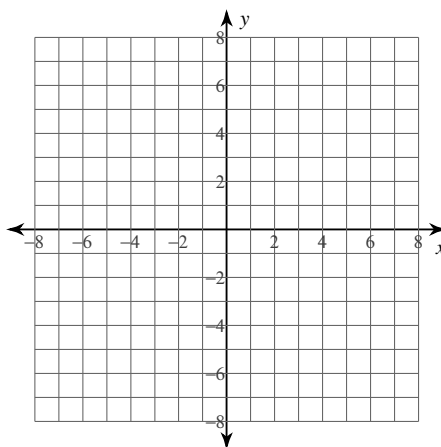
7) $f(x) = -x^2 + 8x - 20$

8) $f(x) = -\dfrac{1}{3}x^2 + \dfrac{4}{3}x - \dfrac{16}{3}$

9) $f(x) = x^2 + 2x - 1$

10) $f(x) = -x^2 - 10x - 30$

Identify the vertex, axis of symmetry, and min/max value of each.

11) $f(x) = 3x^2 - 54x + 241$

12) $f(x) = x^2 - 18x + 86$

13) $f(x) = -\dfrac{4}{5}x^2 + \dfrac{48}{5}x - \dfrac{114}{5}$

14) $f(x) = -2x^2 - 20x - 46$

15) $f(x) = -\dfrac{1}{4}x^2 + 7$

16) $f(x) = x^2 - 12x + 44$

17) $f(x) = \dfrac{1}{4}x^2 - x + 9$

18) $f(x) = x^2 + 4x + 5$