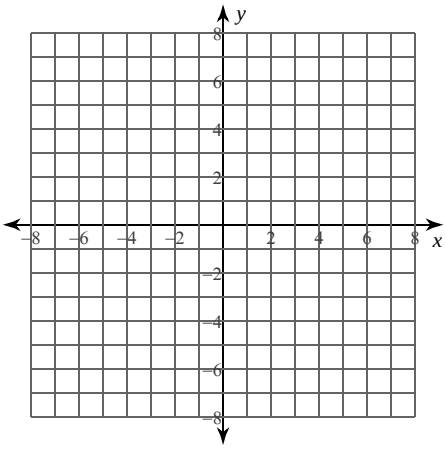
Name_____

Parabolas

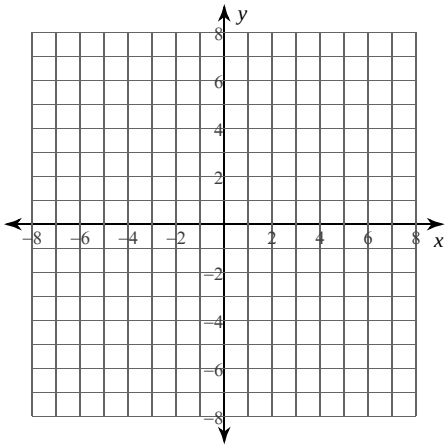
Date_____ Period____

Identify the vertex, focus, axis of symmetry, and directrix of each. Then sketch the graph.

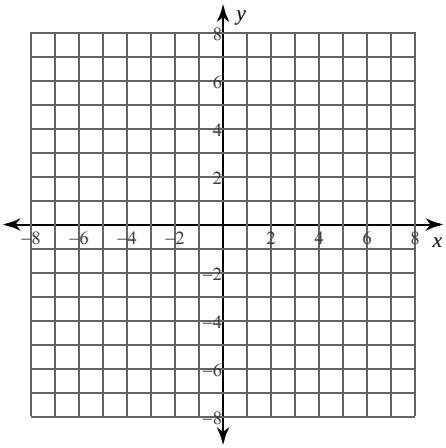
1) $y = -(x + 3)^2 - 1$



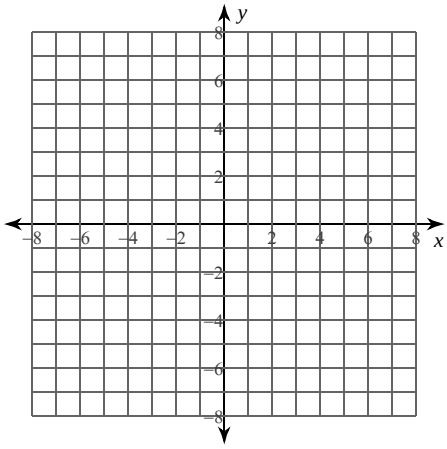
2) $x = -\frac{1}{4}(y + 2)^2$



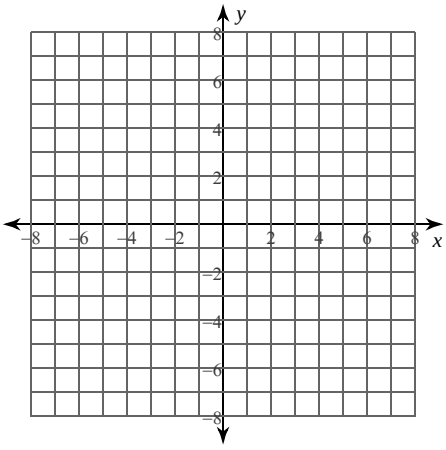
3) $-\frac{1}{3}(x - 3) = (y + 5)^2$



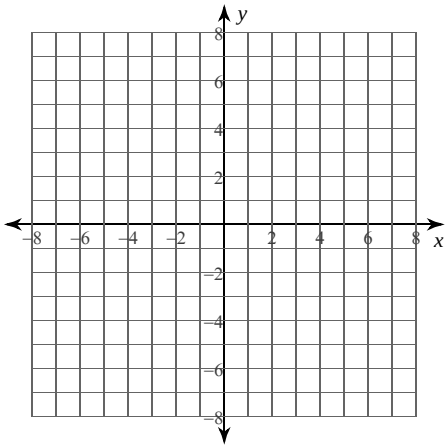
4) $-(y + 2) = (x - 2)^2$



5) $3y + 4x = -2x^2 - 14$



6) $x = -2(y + 2)^2$



Identify the vertex, focus, axis of symmetry, directrix, direction of opening, min/max value, length of the latus rectum, and the x- and y-intercepts of each.

7) $-2x^2 - 4x + y + 70 = 0$

8) $2y^2 + x + 20y + 51 = 0$

Use the information provided to write the transformational form equation of each parabola.

9) Vertex: $(-1, -3)$, Focus: $\left(-\frac{17}{16}, -3\right)$

10) Vertex: $(-3, 0)$, Focus: $\left(-\frac{47}{16}, 0\right)$

11) Vertex: $(-8, 5)$, Directrix: $y = \frac{19}{4}$

12) Opens left or right
Vertex: $(-7, 9)$
Passes through: $(-4, 8)$

13) Vertex: $(-2, -3)$, x-intercept: -11

14) Opens up or down, and passes through $(-4, -3)$, $(-9, 27)$, and $(-3, 3)$