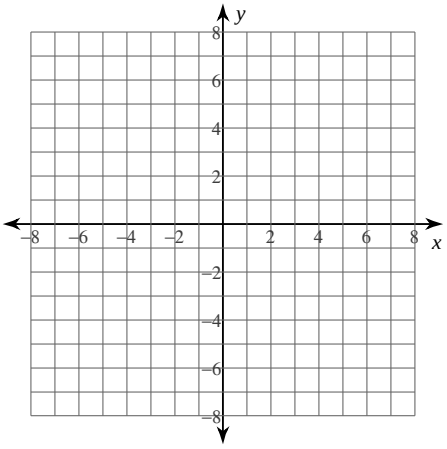
Algebra 2 Name_____

Assignment

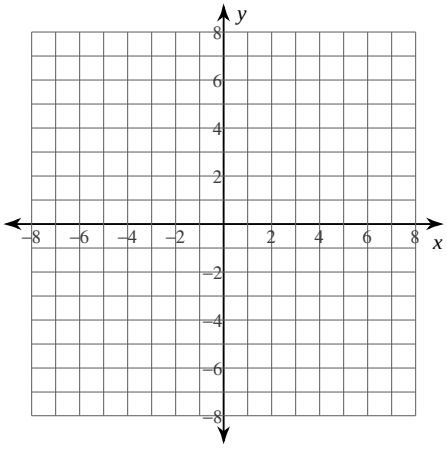
Date_____ Period____

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

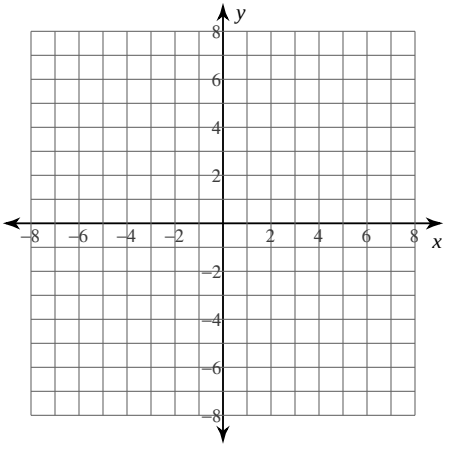
1) $x = -4y^2 - 4$



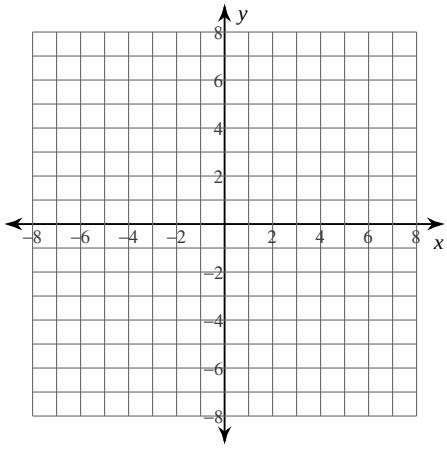
2) $x = -4y^2 - 40y - 96$



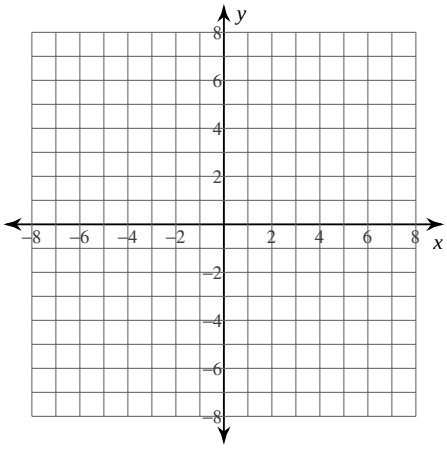
3) $y = 2x^2 + 8x + 5$



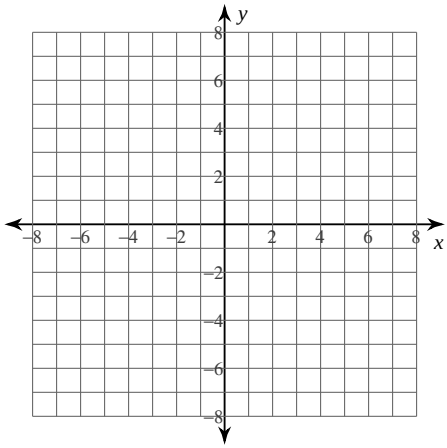
4) $x = -(y - 3)^2 + 2$



5) $x = (y + 4)^2 - 6$



6) $x = -\frac{7}{8}(y + 6)^2 - 2$



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

7) Vertex: $(3, -3)$, Focus: $\left(\frac{83}{28}, -3\right)$

8) Vertex: $(-7, 3)$, Focus: $\left(-\frac{27}{4}, 3\right)$

9) Vertex: $(-2, 1)$, Focus: $\left(-\frac{151}{76}, 1\right)$

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

10) Vertex: $(5, -3)$, Focus: $(6, -3)$

11) Vertex: $(-10, 6)$, Focus: $\left(-\frac{81}{8}, 6\right)$

12) Vertex: $(0, 10)$, Focus: $\left(\frac{1}{4}, 10\right)$

13) Vertex: $(-3, -9)$, Directrix: $x = -\frac{11}{4}$

14) Vertex: $(-4, -10)$, Directrix: $x = -\frac{321}{80}$

15) Vertex: $(8, 9)$, Directrix: $x = \frac{97}{12}$

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

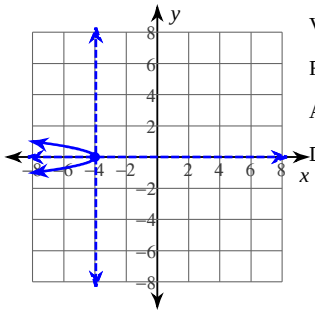
16) Vertex: $(-9, 9)$, Directrix: $x = -\frac{287}{32}$

17) Vertex: $(5, -10)$, Directrix: $y = -\frac{41}{4}$

18) Vertex: $(-6, -6)$, Directrix: $y = -\frac{49}{8}$

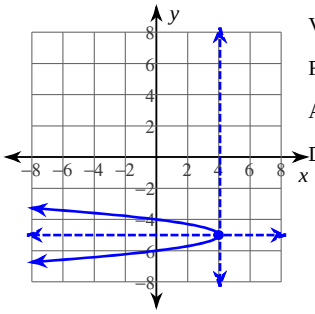
Answers to Assignment (ID: 1)

1)



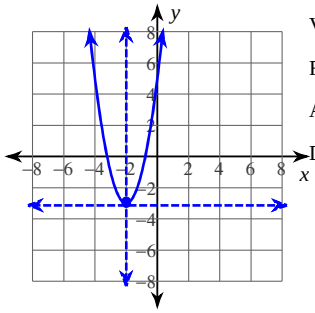
Vertex: $(-4, 0)$
Focus: $\left(-\frac{65}{16}, 0\right)$
Axis of Sym.: $y = 0$
Directrix: $x = -\frac{63}{16}$

2)



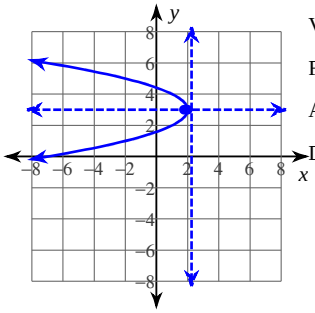
Vertex: $(4, -5)$
Focus: $\left(\frac{63}{16}, -5\right)$
Axis of Sym.: $y = -5$
Directrix: $x = \frac{65}{16}$

3)



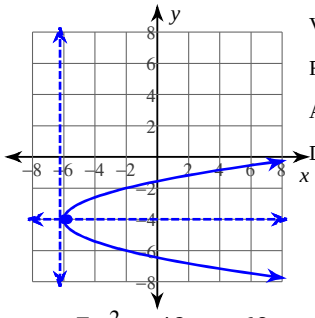
Vertex: $(-2, -3)$
Focus: $\left(-2, -\frac{23}{8}\right)$
Axis of Sym.: $x = -2$
Directrix: $y = -\frac{25}{8}$

4)



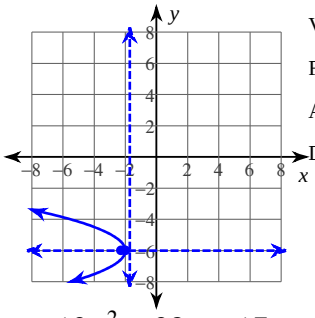
Vertex: $(2, 3)$
Focus: $\left(\frac{7}{4}, 3\right)$
Axis of Sym.: $y = 3$
Directrix: $x = \frac{9}{4}$

5)



Vertex: $(-6, -4)$
Focus: $\left(-\frac{23}{4}, -4\right)$
Axis of Sym.: $y = -4$
Directrix: $x = -\frac{25}{4}$

6)



Vertex: $(-2, -6)$
Focus: $\left(-\frac{16}{7}, -6\right)$
Axis of Sym.: $y = -6$
Directrix: $x = -\frac{12}{7}$

7) $x = -7y^2 - 42y - 60$

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

9) $x = 19y^2 - 38y + 17$

10) $x = \frac{1}{4}(y + 3)^2 + 5$

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

12) $x = (y - 10)^2$

13) $x = -(y + 9)^2 - 3$

14) $x = 20(y + 10)^2 - 4$

15) $x = -3(y - 9)^2 + 8$

16) $x = -8y^2 + 144y - 657$

17) $y = x^2 - 10x + 15$

18) $y = 2x^2 + 24x + 66$