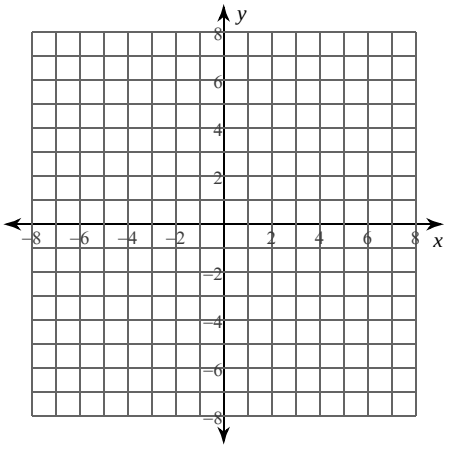
Graphing parabolas Name_____

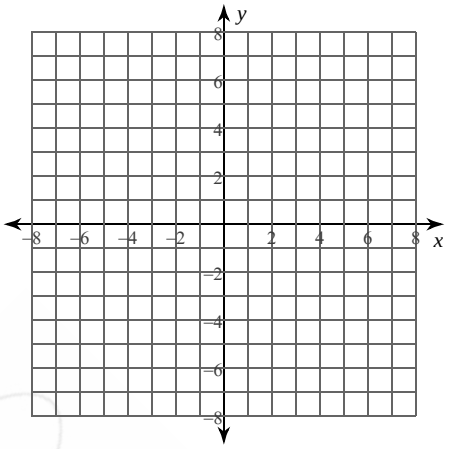
Date_____

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

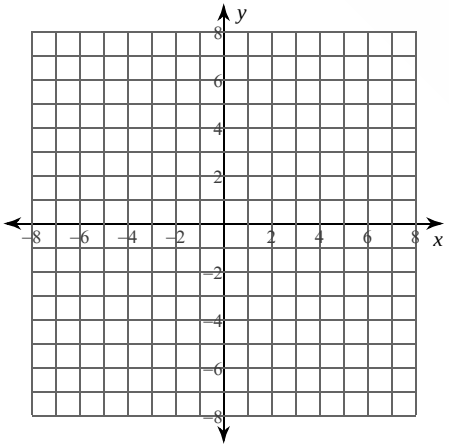
1) $y = 2x^2$



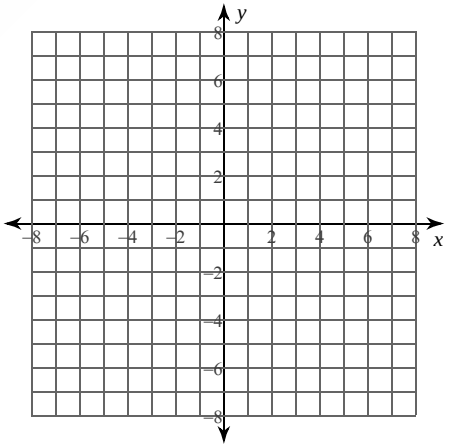
2) $y = x^2$



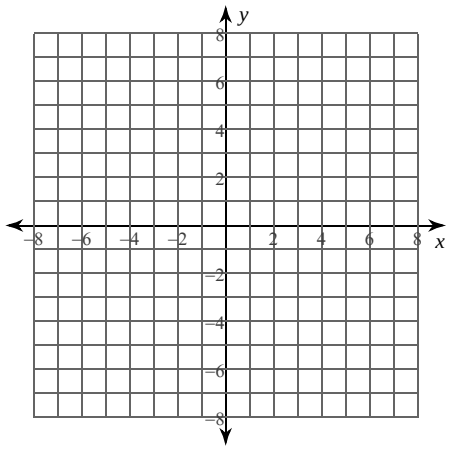
3) $x = \frac{1}{4}y^2$



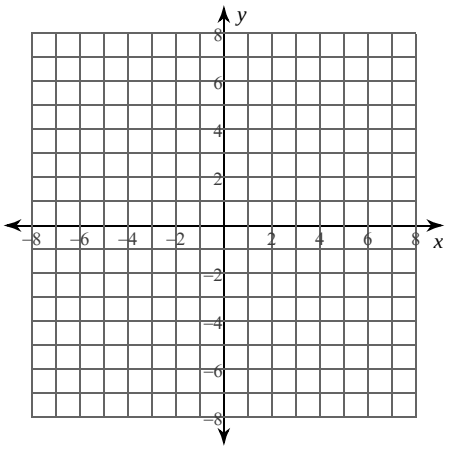
4) $y = -\frac{1}{4}x^2$



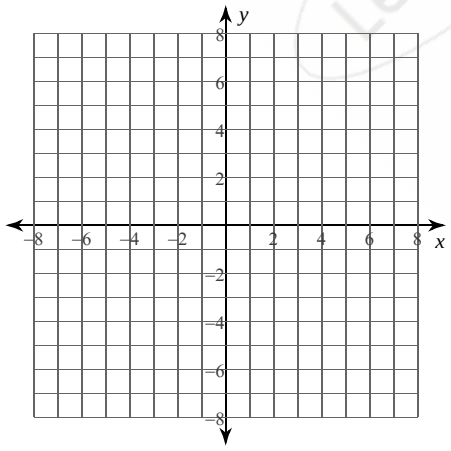
5) $x = -3y^2$



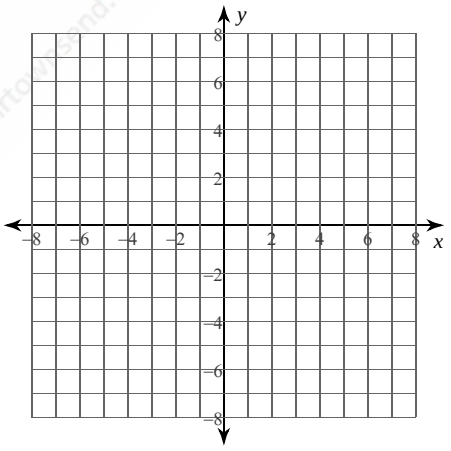
6) $x = y^2$



7) $x = -y^2$

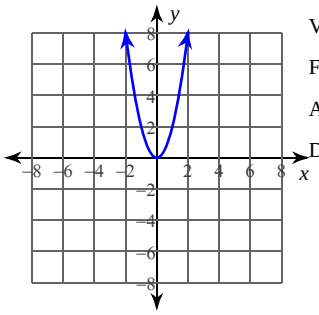


8) $x = -4y^2$



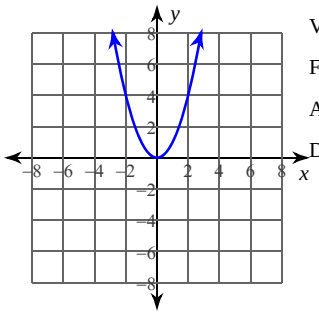
Answers to

1)



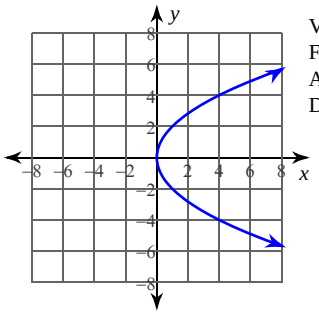
Vertex: $(0, 0)$
Focus: $\left(0, \frac{1}{8}\right)$
Axis of Sym.: $x = 0$
Directrix: $y = -\frac{1}{8}$

2)



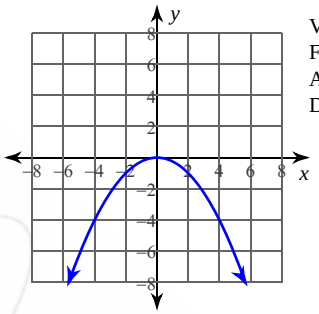
Vertex: $(0, 0)$
Focus: $\left(0, \frac{1}{4}\right)$
Axis of Sym.: $x = 0$
Directrix: $y = -\frac{1}{4}$

3)



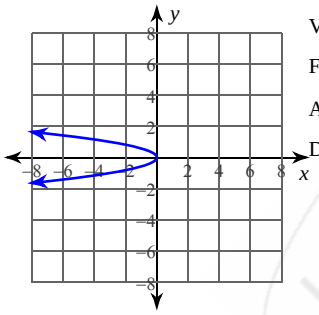
Vertex: $(0, 0)$
Focus: $(1, 0)$
Axis of Sym.: $y = 0$
Directrix: $x = -1$

4)



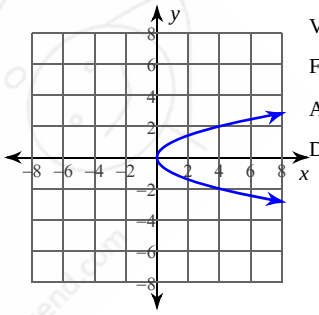
Vertex: $(0, 0)$
Focus: $(0, -1)$
Axis of Sym.: $x = 0$
Directrix: $y = 1$

5)



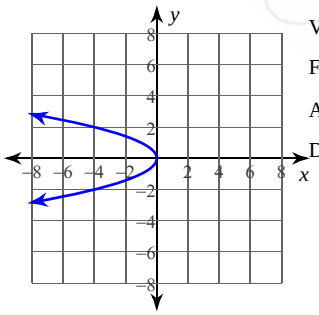
Vertex: $(0, 0)$
Focus: $\left(-\frac{1}{12}, 0\right)$
Axis of Sym.: $y = 0$
Directrix: $x = \frac{1}{12}$

6)



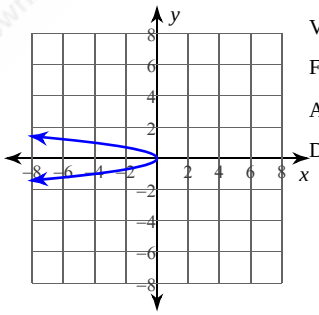
Vertex: $(0, 0)$
Focus: $\left(\frac{1}{4}, 0\right)$
Axis of Sym.: $y = 0$
Directrix: $x = -\frac{1}{4}$

7)



Vertex: $(0, 0)$
Focus: $\left(-\frac{1}{4}, 0\right)$
Axis of Sym.: $y = 0$
Directrix: $x = \frac{1}{4}$

8)



Vertex: $(0, 0)$
Focus: $\left(-\frac{1}{16}, 0\right)$
Axis of Sym.: $y = 0$
Directrix: $x = \frac{1}{16}$