

Practice for Exam 2

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

1) $y = -2x^2 - 20x - 47$

2) $y = -x^2 + 10x - 18$

3) $y = 4x^2 - 40x + 106$

4) $y = \frac{1}{18}x^2 + \frac{2}{9}x - \frac{16}{9}$

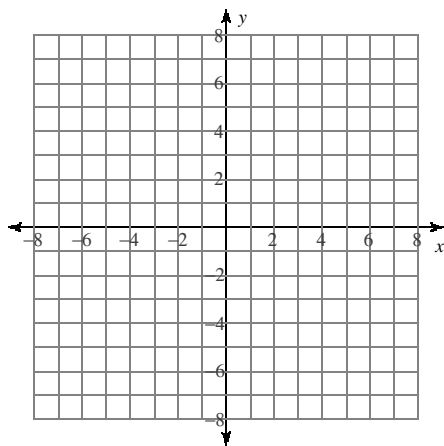
Use the information provided to write the $ax^2 + bx + c = y$ form of the equation of each parabola.

5) $y = -7(x + 6)^2 + 9$

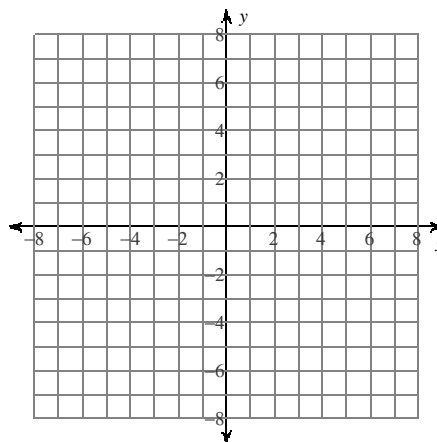
6) $y = -2(x - 6)^2 - 2$

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

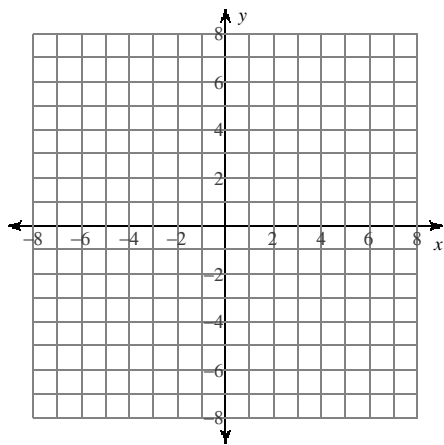
7) $y = -x^2 - 12x - 40$



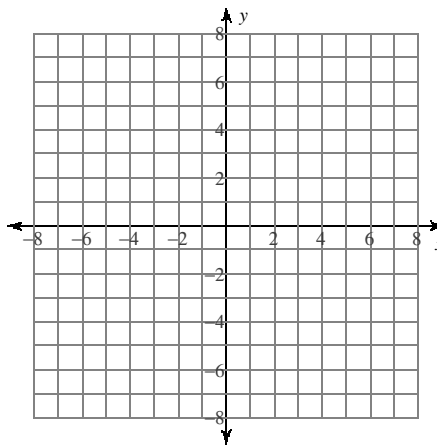
8) $y = -\frac{1}{3}x^2 + 2$



9) $y = -(x - 2)^2 - 5$



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



Answers to Practice for Exam 2

1) $y = -2(x + 5)^2 + 3$

2) $y = -(x - 5)^2 + 7$

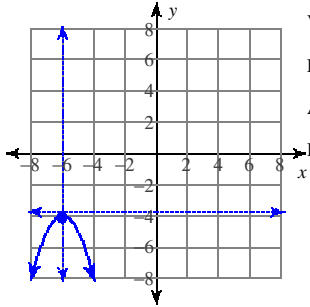
3) $y = 4(x - 5)^2 + 6$

4) $y = \frac{1}{18}(x + 2)^2 - 2$

5) $y = -7x^2 - 84x - 243$

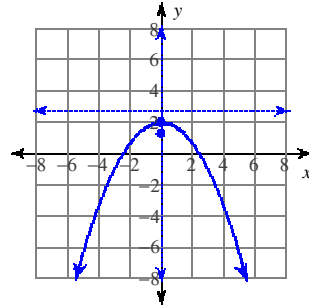
6) $y = -2x^2 + 24x - 74$

7)



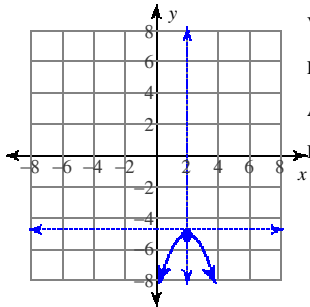
Vertex: $(-6, -4)$
 Focus: $(-6, -\frac{17}{4})$
 Axis of Sym.: $x = -6$
 Directrix: $y = -\frac{15}{4}$

8)



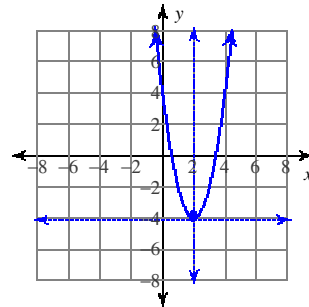
Vertex: $(0, 2)$
 Focus: $(0, \frac{5}{4})$
 Axis of Sym.: $x = 0$
 Directrix: $y = \frac{11}{4}$

9)



Vertex: $(2, -5)$
 Focus: $(2, -\frac{21}{4})$
 Axis of Sym.: $x = 2$
 Directrix: $y = -\frac{19}{4}$

10)



Vertex: $(2, -4)$
 Focus: $(2, -\frac{31}{8})$
 Axis of Sym.: $x = 2$
 Directrix: $y = -\frac{33}{8}$