Name _____ Class _____ Date _____

Practice 5-2

Example Exercises

Example 1

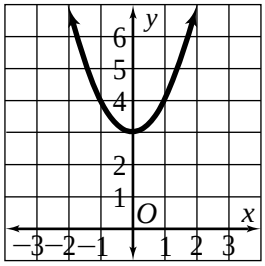
Each point lies on a parabola that has its vertex at the origin. Write the equation for the parabola.

1. $A(4, 3)$ **2.** $Q(-2, -5)$ **3.** $C(6, -4)$ **4.** $F(-3, -15)$

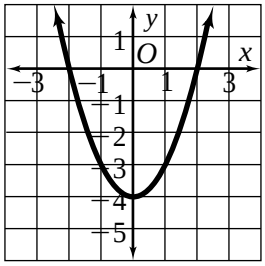
Example 2

Write the equation of each parabola.

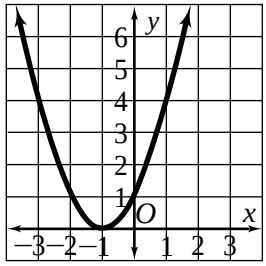
5.



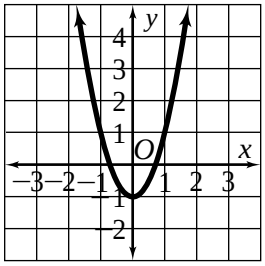
6.



7.



8.



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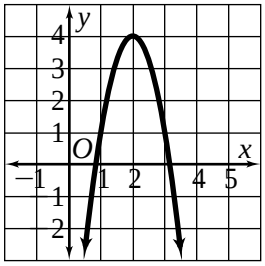

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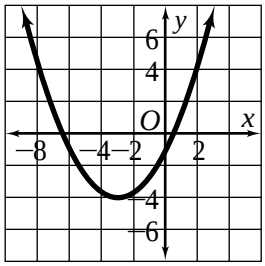

Example 3

Sketch each parabola. Label the vertex and axis of symmetry.

11. $y = 3(x - 2)^2 - 4$ **12.** $y = -\frac{1}{3}(x + 6)^2 + 5$ **13.** $y = 2(x - 1)^2 - 1$

14. $y = \frac{2}{3}(x + 4)^2 - 3$ **15.** $y = (x - 1)^2 + 2$ **16.** $y = -3(x - 2)^2 + 4$

17. $y = 4(x - 5)^2 + 1$ **18.** $y = -2(x + 5)^2 - 3$ **19.** $y = -5(x + 2)^2 + 5$

20. An arch is modeled by the equation $h = -w^2 + 40$, where h is the height in feet and w is the width in feet. Sketch the graph of the equation. How high is the arch?