

# Practice 26

FOR USE WITH SECTION 5.1

Solve each equation.

1.  $x^2 = 144$

2.  $x^2 = 80$

3.  $3x^2 = 147$

4.  $50x^2 = 18$

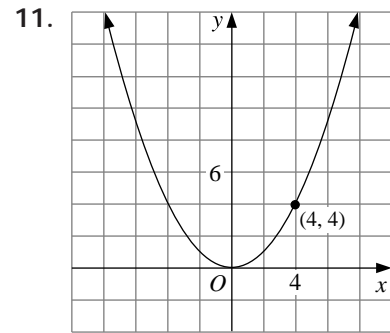
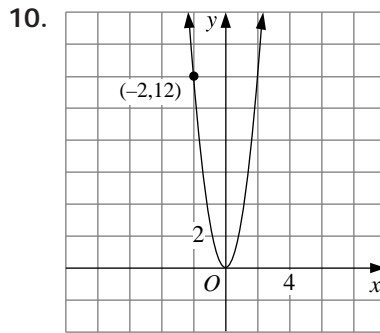
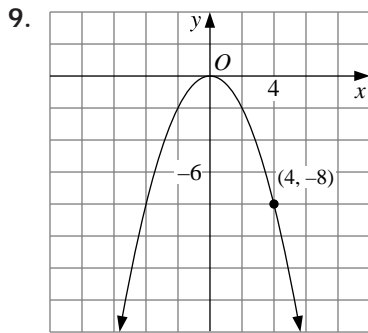
5.  $\frac{3}{5}x^2 = 60$

6.  $-7x^2 = -175$

7.  $\frac{2}{3}x^2 = 150$

8.  $0.009x^2 = 6.3$

Each graph has an equation of the form  $y = ax^2$ . Find  $a$ .



12. A music tent is to be built in the shape of a cone of height 12 ft atop a cylinder of height 16 ft. The volume  $V$  of the tent is given by the formula

$$V = 20\pi r^2,$$

where  $r$  is the radius of both the cone and the cylinder.

a. Graph the function.

b. Find the value of  $r$  that makes the volume of the tent 100,000  $\text{ft}^3$ .

13. The *period*  $T$  of a pendulum is the time it takes the pendulum to make one complete back-and-forth swing. The length  $L$  (in feet) that a pendulum must have in order to have a period  $T$  (in seconds) is given by the formula

$$L = \frac{8T^2}{\pi^2}.$$

a. Graph this function.

b. Find the length of a pendulum with a period of 1 s.

c. What is the period of a pendulum of length 4 ft?