

# Practice 1.6

## Examples



Theresa wants to put a piece of carpet on the floor of her living room. The floor is a square with an area of 182.25 square feet. How long should the piece of carpet be on each side?



A square field has an area of 98.01 square meters. Find the length of each side of the field.



A fully inflated beach ball contains  $288\pi$  cubic inches of air. What is the radius of the beach ball?



A beach ball is a sphere, so you can use the formula for the volume of a sphere.

$$V = \frac{4}{3}\pi r^3$$

By substituting  $288\pi$  for  $V$ , you can solve for  $r$ .

6



Robin bought a crystal globe that has a volume of  $1,774\frac{2}{3}\pi$  cubic centimeters. Find the radius of the crystal globe.

Let the radius of the crystal globe be  $r$  centimeters.

### Math Note

Remember that you can express areas and volumes of circles and spheres in terms of  $\pi$  to simplify calculations.



**Solve each equation involving a variable that is squared. Round your answer to the nearest tenth when you can.**

9  $a^2 = 46.24$

10  $b^2 = \frac{25}{49}$

11  $m^2 = 196$

12  $n^2 = 350$



**Solve each equation involving a variable that is cubed. Write fractions in simplest form, and round decimal answers to the nearest tenth.**

13  $x^3 = 74.088$

14  $x^3 = \frac{216}{729}$

15  $x^3 = 1,728$

16  $x^3 = 2,500$



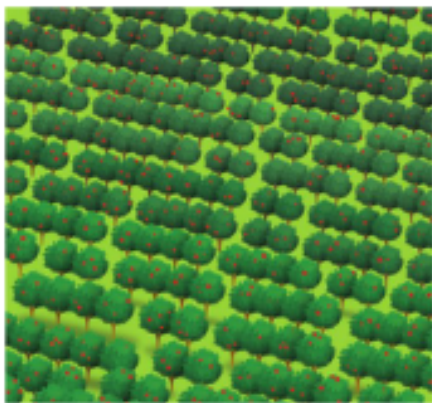
**Solve. Show your work. Round to the nearest tenth.**

- 17 The volume of a spherical tank is  $790.272\pi$  cubic feet. What is the diameter of the container?



$$\text{Volume} = 790.272\pi \text{ ft}^3$$

- 18 An orchard planted on a square plot of land has 3,136 apple trees. If each tree requires an area of 4 square meters to grow, find the length of each side of the plot of land.



- 19 Mr. Berman deposited \$2,500 in a savings account. Three years later there was \$2,812.16 in the savings account. Use the formula  $A = P(1 + r)^n$  to find the rate of interest,  $r$  percent, that he was paid.  $A$  represents the final amount of the investment,  $P$  is the original principal, and  $n$  is the number of years it was invested.