Name _____ Date _____

1. A cylindrical container with a radius of 12 centimeters is filled to a height of 6 centimeters with coconut oil. The density of coconut oil is 0.92 gram per cubic centimeter. What is the mass of the coconut oil to the nearest gram?

2. Describe and correct the error in finding the density of an object that has a mass of 14.5 grams and a volume of 21 cubic inches.
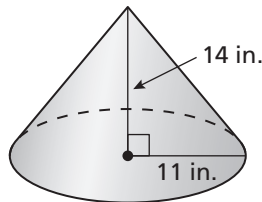
$$\times \quad \text{density} = 14.5 \times 21 = 304.5$$

So, the density is about 304.5 grams per cubic inch.

In Exercises 3 and 4, describe how the change affects the volume of the prism or cone.

3. multiplying the height by $\frac{3}{4}$

8 m

$V = 800 \text{ m}^3$
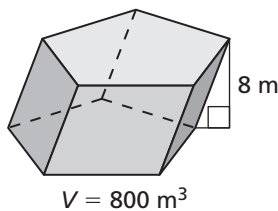
4. doubling all the linear dimensions

14 in.

11 in.

5. A cone has height h and a base with radius r. You want to change the cone so its volume is tripled. What is the new height if you only change the height? What is the new radius if you only change the radius? Explain.

6. The Pyramid Arena in Memphis, Tennessee, is about 98 meters tall and has a square base with a side length of about 180 meters. A prism-shaped building has the same square base as the Pyramid Arena. What is the height of the building if it has the same volume as the Pyramid Arena?

7. A swimming pool in the shape of a cylinder has a radius of 2 meters. The water in the pool is 1 meter deep.

   a. The density of water is about 1 gram per cubic centimeter. Find the number of kilograms of water in the pool.

   b. You add 2500 kilograms of water to the pool. What is the depth of the water in the pool?