Name: _____

8-3 Additional Practice

Leveled Practice In **1** and **2**, find the volume of each cone.

1. What is the volume of the cone? Use 3.14 for π.

$V \approx \frac{1}{3}(3.14)(\boxed{})^2(\boxed{})$

$V \approx \frac{1}{3}(3.14)(\boxed{})(\boxed{})$

$V \approx \frac{1}{3}(\boxed{})$

$V \approx \boxed{}$ units^3

45

20
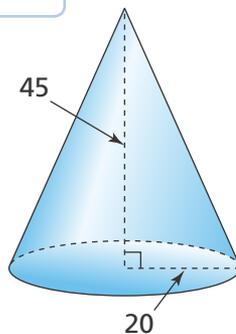
2. Find the volume of the cone. Use $\frac{22}{7}$ for π.

$V \approx \frac{1}{3}\left(\frac{22}{7}\right)(\boxed{})^2(\boxed{})$

$V \approx \frac{1}{3}\left(\frac{22}{7}\right)(\boxed{})(\boxed{})$

$V \approx \frac{1}{3}\left(\frac{22}{7}\right)(\boxed{})$

$V \approx \boxed{}$ in.^{3}

6 in.   14 in.
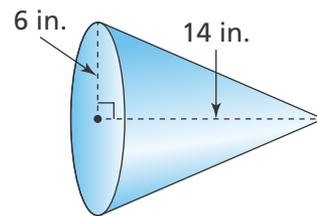
3. A trap to catch fruit flies uses a cone in a jar. The cone is shown.

a. What is the volume of the cone? Write your answer in terms of π.
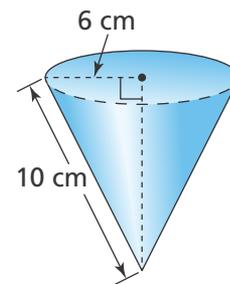
b. Reasoning Explain why an answer in terms of π is more accurate than an answer that uses 3.14 for π. © MP.2

6 cm

10 cm

4. An artist makes a small cone-shaped sculpture for his class. The circumference of the sculpture is 3.14 feet. What is the volume of the sculpture? Use 3.14 for π.

1.5 ft
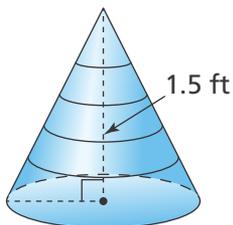
**5.** The cone has a volume of 15,225π cubic millimeters. What is the radius of the base?

203 mm
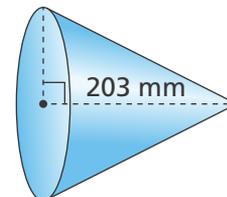
6. The volume of a cone is 763.02 cubic inches. The radius and height of the cone are equal. What is the radius of the cone? Use 3.14 for π.

7. What is the volume of the cone? Use 3.14 for π.

35 m   37 m
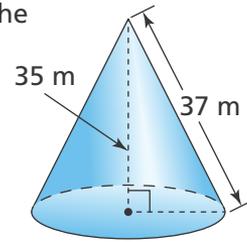
8. a. What is the volume of the cone? Use 3.14 for π.

15 ft

12 ft
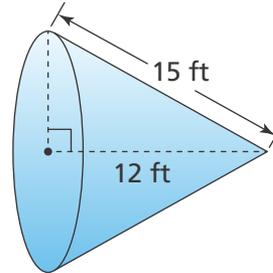
   b. Reasoning Mario says that the volume of the cone is 1,271.7 cubic feet. What error did he likely make? © MP.2

9. A cone has a height of 14 centimeters and a base with a circumference of 8.4π centimeters. What is the volume of the cone in terms of π?

10. Higher Order Thinking A cone has a radius of 39 centimeters and a slant height of 65 centimeters.

   a. What is the volume of the cube in terms of π?

   b. Reasoning If the radius is now half the size and the height is the same, how has the volume of the cone changed?

© Assessment Practice

11. List the cones described below in order from least volume to greatest volume.

- Cone 1: radius 16 cm and height 12 cm
- Cone 2: radius 12 cm and height 16 cm
- Cone 3: radius 8 cm and height 24 cm

Ⓐ Cone 1, Cone 2, Cone 3

Ⓑ Cone 2, Cone 1, Cone 3

Ⓒ Cone 3, Cone 2, Cone 1

Ⓓ Cone 3, Cone 1, Cone 2

12. What is the volume of a cone that has a radius of 9 inches and a height of 16 inches? Use 3.14 for π.