Use your formula sheet.

V = area of base · height HW #16 There is a back. Show work.

PRACTICE AND PROBLEM SOLVING

Independent Practice

For Exercises	See Example
13–15	1
16	2
17–19	3
20–21	4
22–23	5

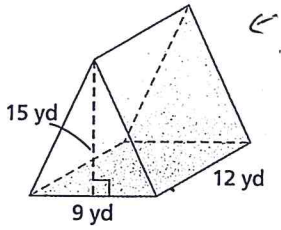
Extra Practice

Skills Practice p. S23

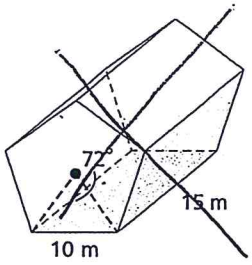
Application Practice p. S37

Find the volume of each prism.

13. ← Hint: the triangle is the base.



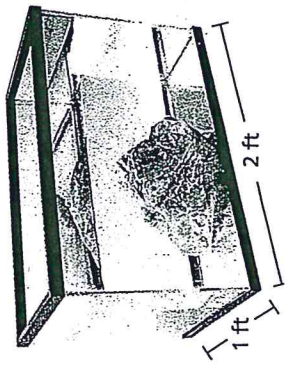
14.



15. a square prism with a base area of 49 ft^2 and a height 2 ft less than the base edge length

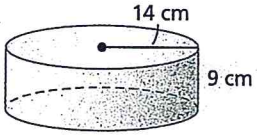
16. **Landscaping** Colin is buying dirt to fill a garden bed that is a 9 ft by 16 ft rectangle. If he wants to fill it to a depth of 4 in., how many cubic yards of dirt does he need? If dirt costs \$25 per yd^3, how much will the project cost? (*Hint:* 1 yd^3 = 27 ft^3)

4 in = ? ft

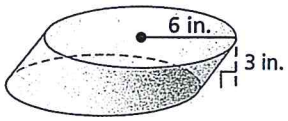


Find the volume of each cylinder. Give your answers both in terms of π and rounded to the nearest tenth.

17.



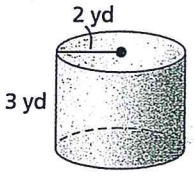
18.



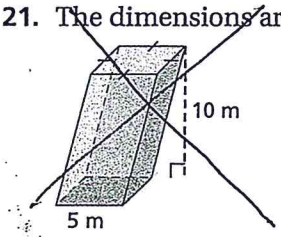
19. a cylinder with base area 24π cm^2 and height 16 cm

Describe the effect of each change on the volume of the given figure.

20. The dimensions are multiplied by 5.

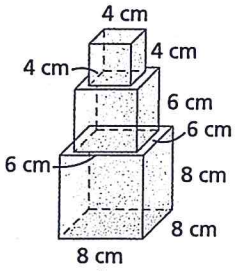


21. The dimensions are multiplied by $\frac{3}{5}$.

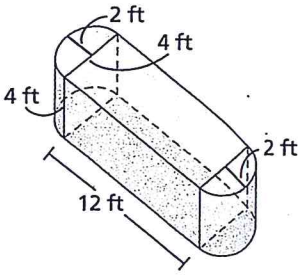


Find the volume of each composite figure.

22.



23.



24. One cup is equal to 14.4375 in^3. If a 1 c cylindrical measuring cup has a radius of 2 in., what is its height? If the radius is 1.5 in., what is its height?

25. **Food** A cake is a cylinder with a diameter of 10 in. and a height of 3 in. For a party, a coin has been mixed into the batter and baked inside the cake. The person who gets the piece with the coin wins a prize.

   a. Find the volume of the cake. Round to the nearest tenth.

   b. **Probability** Keka gets a piece of cake that is a right rectangular prism with a 3 in. by 1 in. base. What is the probability that the coin is in her piece? Round to the nearest tenth.

31. You can use *displacement* to find the volume of an irregular object, such as a stone. Suppose the tank shown is filled with water to a depth of 8 in. A stone is placed in the tank so that it is completely covered, causing the water level to rise by 2 in. Find the volume of the stone.

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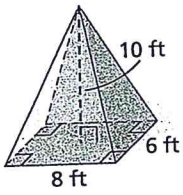
PRACTICE AND PROBLEM SOLVING

$V = \frac{\text{area of base} \cdot \text{ht}}{3}$

Find the volume of each pyramid. Round to the nearest tenth, if necessary.

13.



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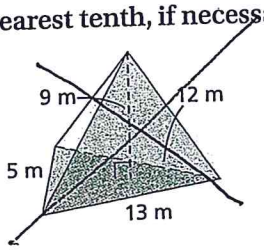
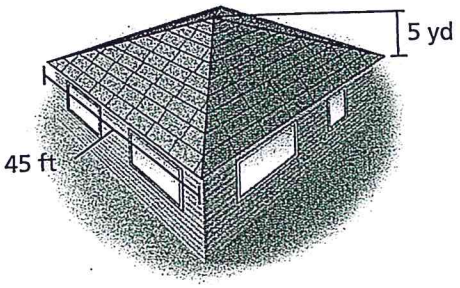


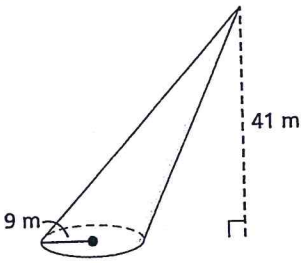
15. a regular square pyramid with base edge length 12 ft and slant height 10 ft

16. Carpentry A roof that encloses an attic is a square pyramid with a base edge length of 45 feet and a height of 5 yards. What is the volume of the attic in cubic feet? In cubic yards?



Find the volume of each cone. Give your answers both in terms of π and rounded to the nearest tenth.

17.



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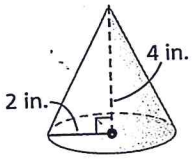
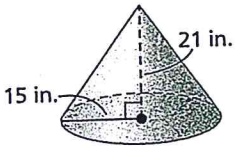


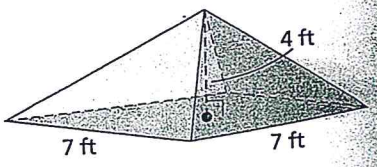
19. a cone with base area 36π ft^2 and a height equal to twice the radius

Describe the effect of each change on the volume of the given figure.

20. The dimensions are multiplied by $\frac{1}{3}$.

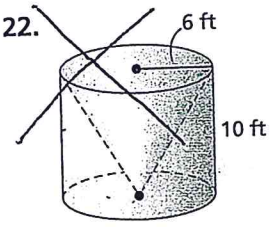


21. The dimensions are multiplied by 6.



Find the volume of each composite figure. Round to the nearest tenth, if necessary.

22.



23.