8.2 Exercises

Check It Out
Help with Homework
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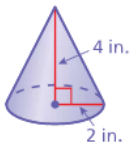
Vocabulary and Concept Check

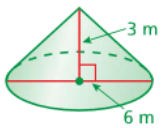
1. **VOCABULARY** Describe the height of a cone.
2. **WRITING** Compare and contrast the formulas for the volume of a pyramid and the volume of a cone.
3. **REASONING** You know the volume of a cylinder. How can you find the volume of a cone with the same base and height?

Practice and Problem Solving

Find the volume of the cone. Round your answer to the nearest tenth.

1

4. 

5. 

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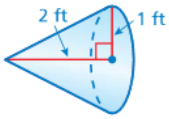
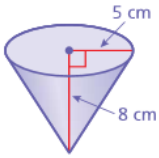
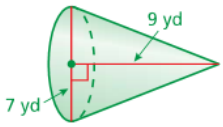
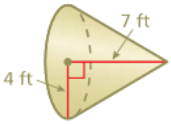
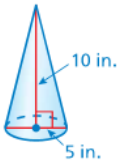
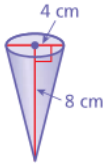
7. 

8. 

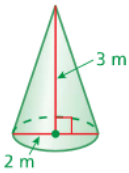
9. 

10. 

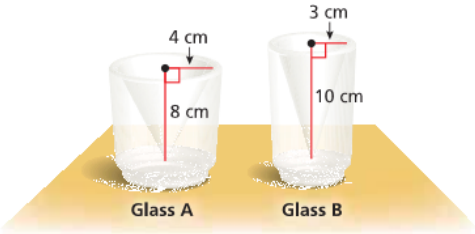
11. 

12. 

13. **ERROR ANALYSIS** Describe and correct the error in finding the volume of the cone.



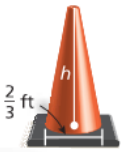
$$V = \frac{1}{3}Bh$$
$$= \frac{1}{3}(\pi)(2)^2(3)$$
$$= 4\pi \text{ m}^3$$



14. **GLASS** The inside of each glass is shaped like a cone. Which glass can hold more liquid? How much more?

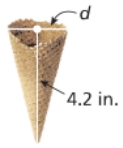
Find the missing dimension of the cone. Round your answer to the nearest tenth.

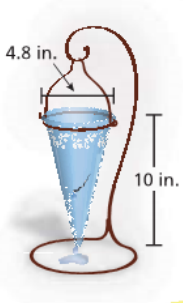
2 **15.** Volume $= \frac{1}{18}\pi$ ft^3



16. Volume $= 225$ cm^3

17. Volume $= 3.6$ in.^{3}





18. REASONING The volume of a cone is 20π cubic meters. What is the volume of a cylinder with the same base and height?

19. VASE Water leaks from a crack in a vase at a rate of 0.5 cubic inch per minute. How long does it take for 20% of the water to leak from a full vase?

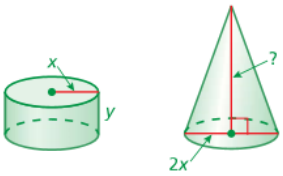
20. LEMONADE STAND You have 10 gallons of lemonade to sell. (1 gal $\approx$ 3785 cm^3)

a. Each customer uses one paper cup. How many paper cups will you need?

b. The cups are sold in packages of 50. How many packages should you buy?

c. How many cups will be left over if you sell 80% of the lemonade?

21. STRUCTURE The cylinder and the cone have the same volume. What is the height of the cone?



22. Critical Thinking In Example 3, you use a different timer with the same dimensions. The sand in this timer has a height of 30 millimeters. How much time do you have to answer the question?

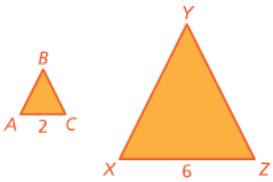
Fair Game Review *What you learned in previous grades & lessons*

The vertices of a figure are given. Rotate the figure as described. Find the coordinates of the image. *(Section 2.4)*

23. $A(-1, 1)$, $B(2, 3)$, $C(2, 1)$
$90°$ counterclockwise about vertex A

24. $E(-4, 1)$, $F(-3, 3)$, $G(-2, 3)$, $H(-1, 1)$
$180°$ about the origin

25. MULTIPLE CHOICE $\triangle ABC$ is similar to $\triangle XYZ$. How many times greater is the area of $\triangle XYZ$ than the area of $\triangle ABC$? *(Section 2.6)*



Ⓐ $\frac{1}{9}$ Ⓑ $\frac{1}{3}$

Ⓒ 3 Ⓓ 9