

7.1 Exercises

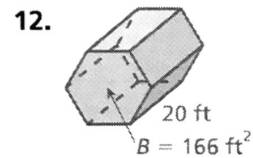
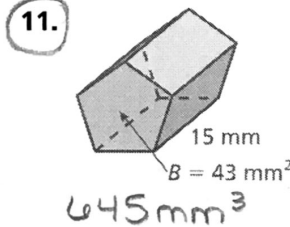
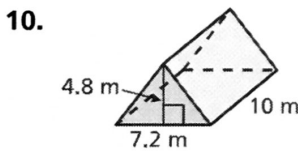
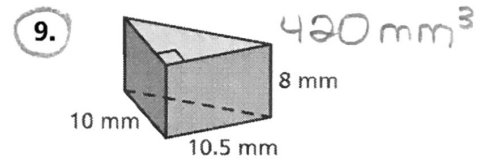
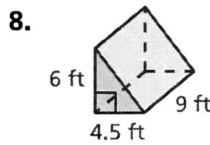
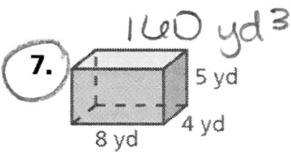
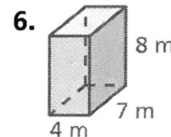
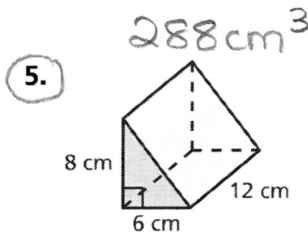
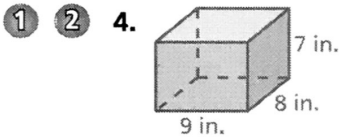
Vocabulary and Concept Check

- VOCABULARY** What type of units are used to describe volume? *cubic ft, cubic inches, etc*
- CRITICAL THINKING** What is the difference between volume and surface area?
- CRITICAL THINKING** You are ordering packaging for a product. Should you be more concerned with volume or surface area? Explain.

*Answers will vary.
Both are useful*

Practice and Problem Solving

Find the volume of the prism.

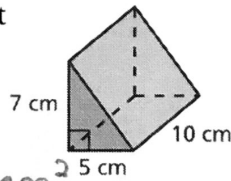


13. **ERROR ANALYSIS** Describe and correct the error in finding the volume of the triangular prism.

Area of base is

$\frac{1}{2}(5)(7) = 17.5 \text{ cm}^2$

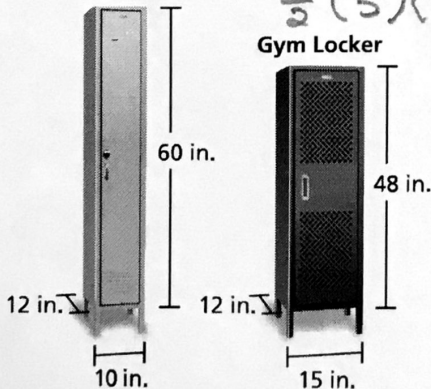
so $17.5 \text{ cm}^2 \cdot 10 = 175 \text{ cm}^3$



X $V = Bh$
 $= 10(5)(7)$
 $= 50 \cdot 7$
 $= 350 \text{ cm}^3$

School Locker

Gym Locker



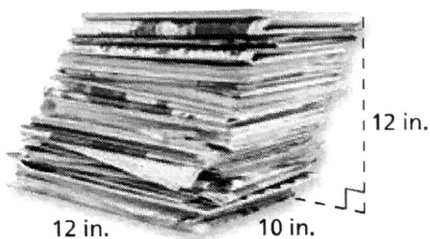
14. **LOCKER** Each locker is shaped like a rectangular prism. Which has more storage space? Explain.

15. **CEREAL BOX** A cereal box is 9 inches by 2.5 inches by 10 inches. What is the volume of the box?

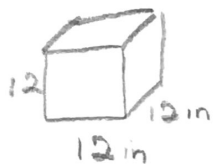
225 in³

Find the volume of the prism.

16.

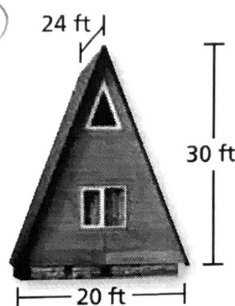


$1,728 \text{ in}^3$



area of base
 ↓
 $100h = 2000 \text{ cm}^3$
 $h = 20 \text{ cm}$
 equal to 2L of water

17.

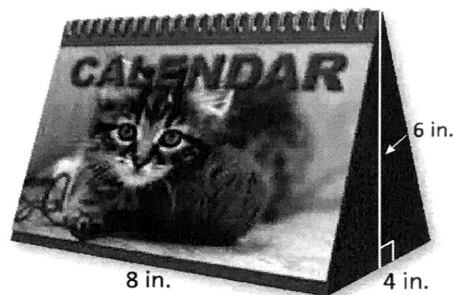


7200 ft^3

18. **REASONING** Two prisms have the same volume. Do they *always*, *sometimes*, or *never* have the same surface area? Explain.

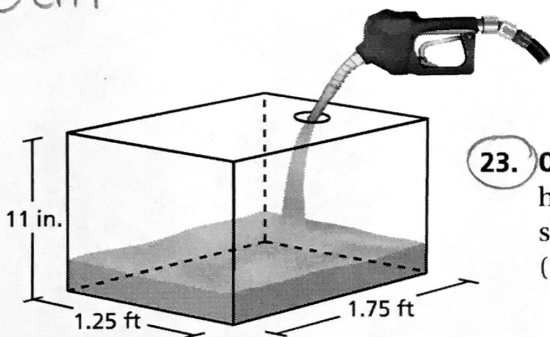
19. **CUBIC UNITS** How many cubic inches are in a cubic foot? Use a sketch to explain your reasoning.

20. **CAPACITY** As a gift, you fill the calendar with packets of chocolate candy. Each packet has a volume of 2 cubic inches. Find the maximum number of packets you can fit inside the calendar.



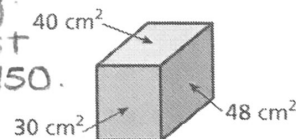
21. **HEIGHT** Two liters of water are poured into an empty vase shaped like an octagonal prism. The base area is 100 square centimeters. What is the height of the water? (1 L = 1000 cm³)

22. **GAS TANK** The gas tank is 20% full. Use the current price of gas in your community to find the cost to fill the tank. (1 gal = 231 in.³)



23. **OPEN-ENDED** The Pier Aquarium in St. Petersburg, Florida has a 450-gallon aquarium exhibit. Draw a diagram to show one possible set of dimensions of the tank. (1 gal = 231 in.³)

Answers will vary.
 Dimensions (3) must multiply to make 450.



24. **Critical Thinking** What is the volume of the rectangular prism?



Fair Game Review what you learned in previous grades & lessons

Identify the transformation.

SECTION 5.5

SECTION 5.6

SECTION 5.7



28. **MULTIPLE CHOICE** What is the approximate surface area of a cylinder with a radius of 3 inches and a height of 10 inches?

SECTION 6.3

(A) 30 in.²

(B) 87 in.²

(C) 217 in.²

(D) 245 in.²