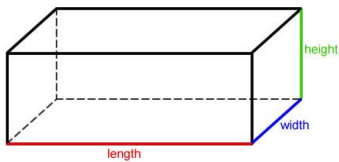
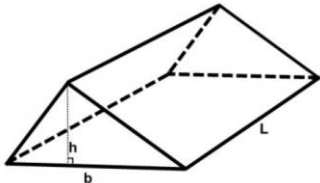
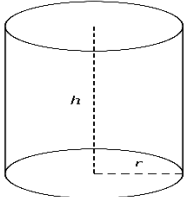
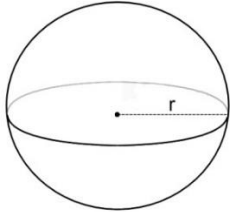
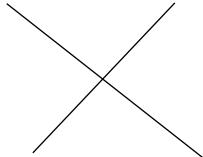
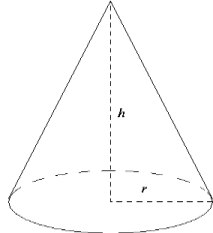
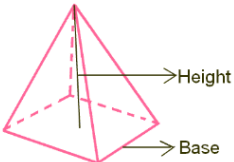



Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Unit 8b Review Sheet

Figure	Name	Volume Formula	Surface Area Formula
1. 			
2. 			
3. 			
4. 			
5. 			
6. 			
7. 			

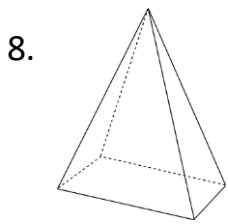
**\*\* Don't Forget:**      ***Circumference =  $\pi d$***

***Area of circle =  $\pi r^2$***

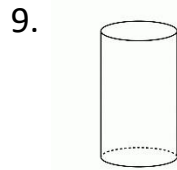
***Area of Trapezoid =  $1/2 (b_1+b_2)(h)$***

***Area of Semicircle:  $(\pi r^2)/2$***       **P1**

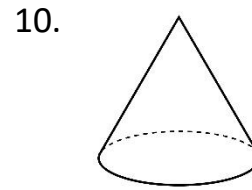
Find the **a) Vertical Cross Section** and **b) Horizontal Cross Section** of:



- a) Vertical:  
b) Horizontal:



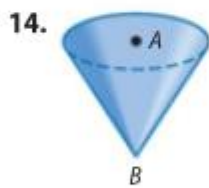
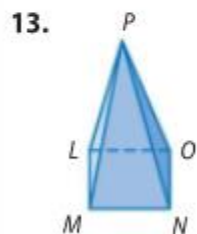
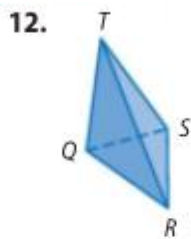
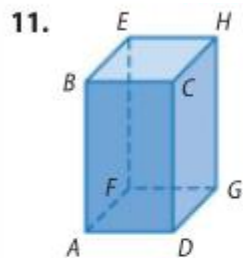
- a) Vertical:  
b) Horizontal:



- a) Vertical:  
b) Horizontal:

**Lesson 12-4 Three-Dimensional Figures** (pp. 574–579)

Identify each figure. Name the bases, faces, edges, and vertices. **Complete #11-14 Below in space**



15. Draw the top view and side view of the drum. Then draw and describe the shape resulting from a vertical cross section of the figure.



11. Bases:  
Faces:  
Edges:  
Vertices:

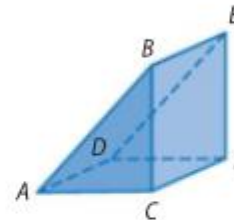
12. Bases:  
Faces:  
Edges:  
Vertices:

13. Bases:  
Faces:  
Edges:  
Vertices:

14. Bases:  
Faces:  
Edges:  
Vertices:

**Example 4**

Identify the figure. Name the bases, faces, edges, and vertices.



There are two congruent triangular bases, so the solid is a triangular prism.

bases:  $ABC, DEF$

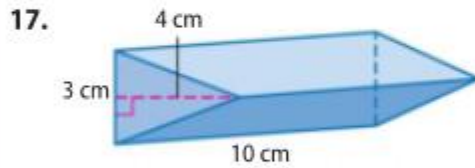
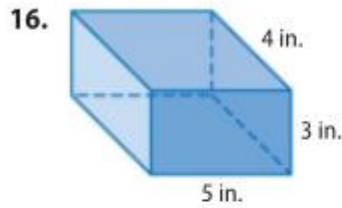
faces:  $ABED, BCFE, ACFD, ABC, DEF$

edges:  $\overline{AB}, \overline{BC}, \overline{AC}, \overline{DE}, \overline{EF}, \overline{DF}, \overline{AD}, \overline{BE}, \overline{CF}$

vertices:  $A, B, C, D, E, F$

## Lesson 12-5 Volume of Prisms (pp. 580–585)

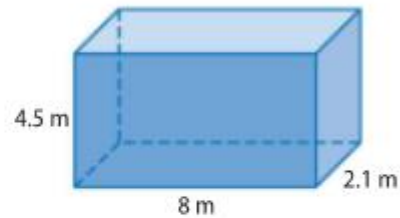
Find the volume of each prism.



18. A shipping box is 11 inches long, 8.5 inches wide, and 5.5 inches high. What is the volume of the box?
19. Sandra is filling a keepsake storage box that is 40.5 centimeters long, 28 centimeters wide, and 17 centimeters high. What is the volume of the box?

### Example 5

Find the volume of the rectangular prism.



$$V = \ell wh$$

Volume of a prism

$$V = 8 \cdot 2.1 \cdot 4.5$$

Replace  $\ell$  with 8,  $w$  with 2.1, and  $h$  with 4.5.

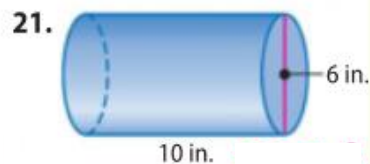
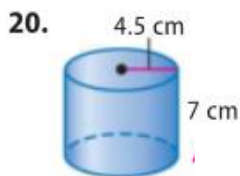
$$V = 75.6 \text{ m}^3$$

Simplify.

The volume of the prism is 75.6 cubic meters.

## Lesson 12-6 Volume of Cylinders (pp. 586–590)

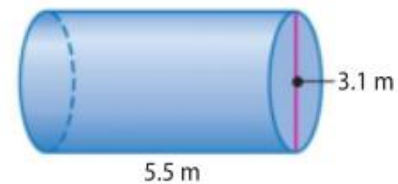
Find the volume of each cylinder. Round to the nearest tenth, if necessary.



22. A 12-ounce can of soda measures  $4\frac{3}{4}$  inches high with a radius of  $1\frac{1}{8}$  inches. Find the amount of soda that can fit in the can. Round to the nearest tenth.

### Example 6

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



$$V = \pi r^2 h$$

Volume of a cylinder

$$V = \pi(1.55)^2(5.5)$$

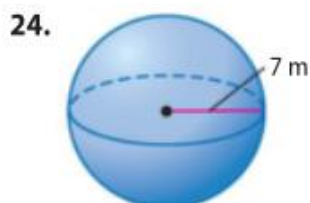
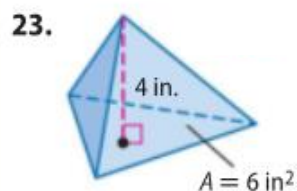
Replace  $r$  with 1.55 and  $h$  with 5.5.

$$V \approx 41.5 \text{ m}^3$$

Simplify.

## Lesson 12-7 Volume of Pyramids, Cones, and Spheres (pp. 595–600)

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



25. Mr. Owens built a conical storage shed with a base 14 feet in diameter and a height of 11 feet. What is the volume of the shed?

### Example 7

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



$$\begin{aligned} V &= \frac{1}{3}\pi r^2 h \\ &= \frac{1}{3}\pi(4.1)^2(6.2) \\ &\approx 109.1 \text{ m}^3 \end{aligned}$$

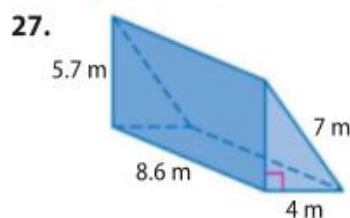
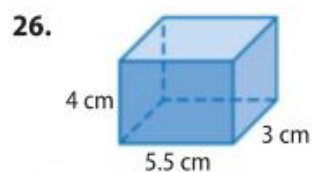
Volume of a cone

Replace  $r$  with 4.1 and  $h$  with 6.2.

Simplify.

## Lesson 12-8 Surface Area of Prisms (pp. 603–607)

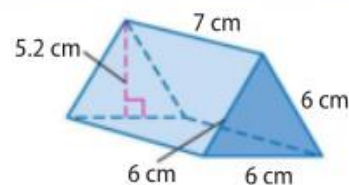
Find the lateral and surface area of each prism. Round to the nearest tenth, if necessary.



28. Sarah is wrapping a gift that is 12 inches long, 6 inches wide, and 4 inches high. How many square inches of paper are needed to cover the gift?

### Example 8

Find the lateral and surface area of the prism.



$$\begin{aligned} L &= Ph \\ &= (6 + 6 + 6)7 \\ &= 126 \text{ cm}^2 \\ S &= L + 2B \\ &= 126 + 2\left(\frac{1}{2} \cdot 6 \cdot 5.2\right) \\ &= 157.2 \text{ cm}^2 \end{aligned}$$

Lateral area of a prism

$P$  = the perimeter of the base.

Simplify.

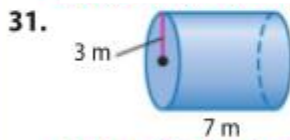
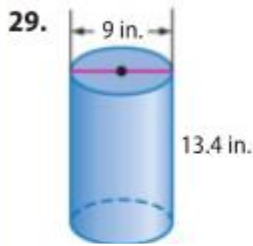
Surface area of a prism

$B = \frac{1}{2}bh$

Simplify.

## Lesson 12-9 Surface Area of Cylinders (pp. 610–614)

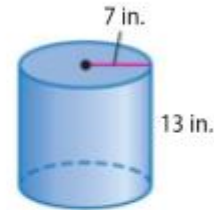
Find the lateral and surface area of each cylinder. Round to the nearest tenth, if necessary.



33. A cable is covered by rubber sheathing and has a diameter of 3 millimeters. How much rubber sheathing is there in 100 centimeters of cable?

### Example 9

Find the lateral and surface areas of the cylinder below. Round to the nearest tenth, if necessary.



Lateral Area

$$\begin{aligned} L &= 2\pi r h \\ &= 2 \cdot \pi \cdot 7 \cdot 13 \\ &\approx 571.8 \text{ in}^2 \end{aligned}$$

Lateral area of a cylinder

Replace  $r$  with 7 and  $h$  with 13.

Simplify.

Surface Area

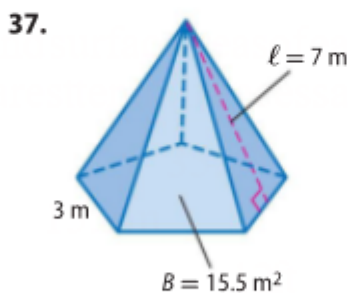
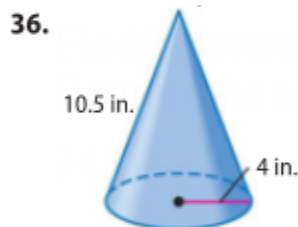
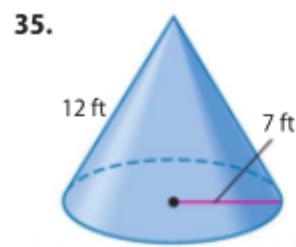
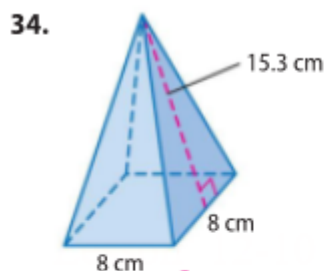
$$\begin{aligned} S &= L + 2\pi r^2 \\ &= 571.8 + 2\pi(7)^2 \\ &\approx 879.7 \text{ in}^2 \end{aligned}$$

Surface area of a cylinder

Replace  $L$  with 571.8 and  $r$  with 7.

Simplify.

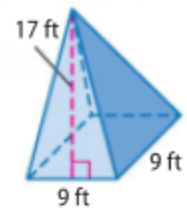
Find the lateral and surface areas of each figure. Round to the nearest tenth, if necessary.



38. A pyramid-shaped roof has a slant height of 18 feet and its square base is 55 feet wide. How many square feet of roofing material is needed to cover the roof?

### Example 10

Find the lateral and surface area of the square pyramid.



Lateral Area

$$\begin{aligned} L &= \frac{1}{2}P\ell \\ &= \frac{1}{2}(4 \cdot 9)(17) \\ &= 306 \text{ ft}^2 \end{aligned}$$

Lateral area of a pyramid

Substitute.

Simplify.

Surface Area

$$\begin{aligned} S &= L + B \\ &= 306 + 9^2 \\ &= 387 \text{ ft}^2 \end{aligned}$$

Surface area of a pyramid

Substitute.

Simplify.