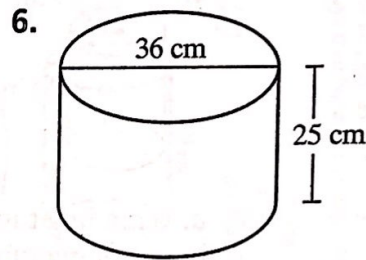
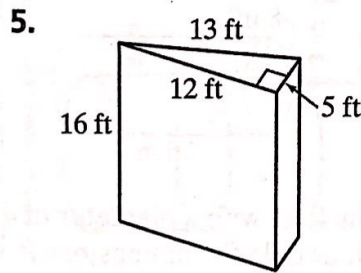
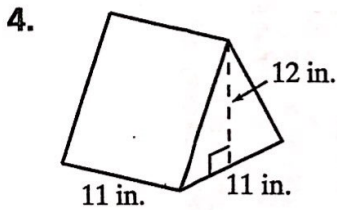
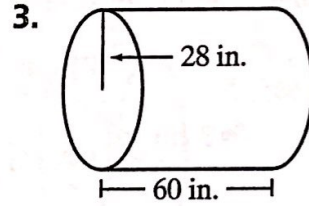
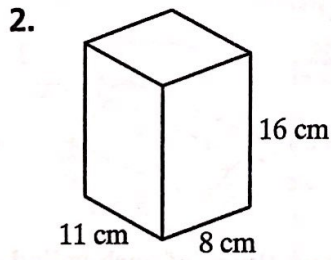
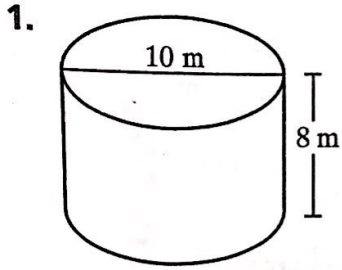


Practice 10-7 Volume: Prisms and Cylinders

Find the volume of each prism or cylinder to the nearest cubic unit.



7. prism
rectangular base:
8 in. by 6 in.
height: 7 in.

8. cylinder
radius: 14 in.
height: 18 in.

9. cylinder
radius: 5 cm
height: 11.2 cm

10. prism
square base:
3.5 ft on a side
height: 6 ft

11. cube
sides: 13 m

12. cylinder
diameter: 5 ft
height: 9 ft

13. A water storage tank has a cylindrical shape. The base has a diameter of 18 m and the tank is 32 m high. How much water, to the nearest cubic unit, can the tank hold?

14. A tent in the shape of a triangular prism has a square base with a side of 8 feet and a height of 6 feet. What is the volume of the tent?

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page 1

EXERCISES

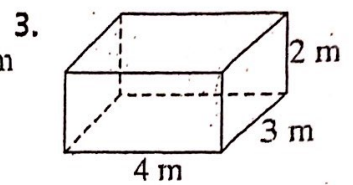
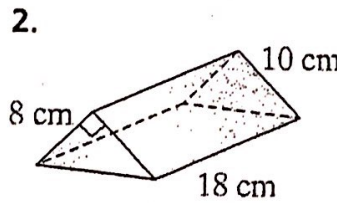
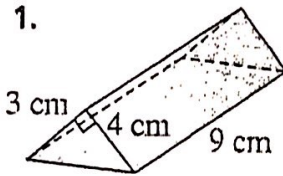
? For more exercises, see *Extra Practice*.

Practice and Problem Solving

A Practice by Example

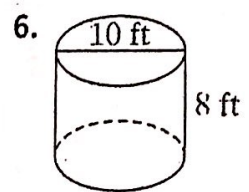
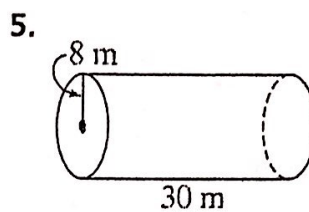
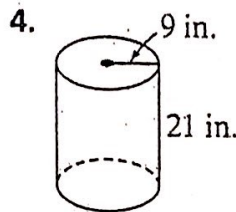
Find the volume of each prism.

Example 1
(page 558)



Example 2
(page 558)

For Exercises 4–7, find the volume of each cylinder to the nearest cubic unit.

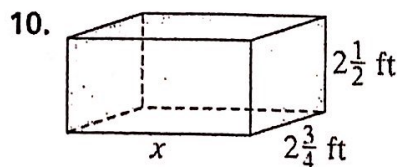


7. a. a mailing tube 25 in. long with a diameter of 4 in.
b. a mailing tube with double the dimensions in part (a)
c. How do the volumes of the two mailing tubes compare?

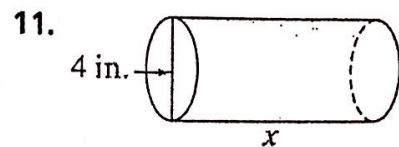
B Apply Your Skills

8. **Firewood** Wood for a fireplace is often sold by the cord. A cord is 8 ft by 4 ft by 4 ft. How many cubic feet are in a cord of wood?
9. **Storage** An under-the-bed storage box measures 24 in. by 12 in. by 3 in. Find its volume to the nearest cubic centimeter (1 in. = 2.54 cm).

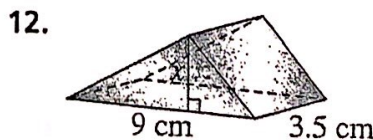
Find each missing dimension. Use $\pi \approx 3.14$.



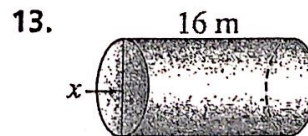
$V = 38.5 \text{ ft}^3$
Length = $\frac{3}{4}$



$V = 125.6 \text{ in.}^3$
Height $\approx \frac{3}{4}$



$V = 50.4 \text{ cm}^3$
Height of triangle = $\frac{3}{4}$



$V = 1,256 \text{ m}^3$
Diameter $\approx \frac{3}{4}$

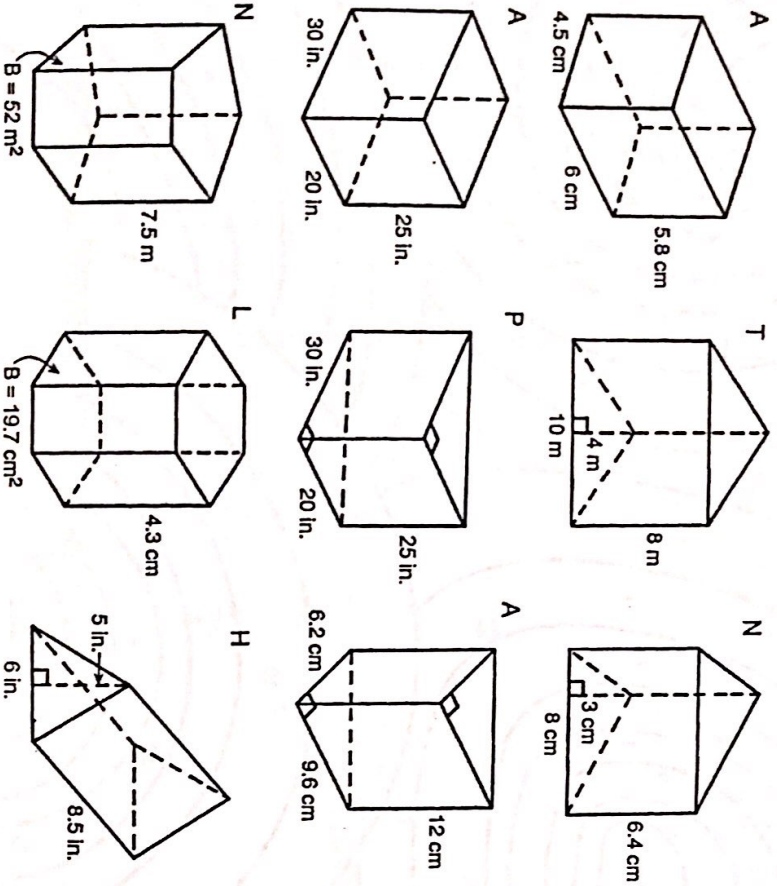
Writing in Math Describe one real object with the given shape. Explain why you might want to find the volume of the object.

14. triangular prism 15. cylinder 16. rectangular prism

PAGE 2

What Is Big, Gray, and Lives in California?

Find the volume of each prism. Write the letter of the exercise in the box above the answer at the bottom of the page.



83.8 cm ³	
357.12 cm ³	
76.8 cm ³	
8,800 in. ³	
92.31 cm ³	
84.71 cm ³	
156.6 cm ³	
114.5 in. ³	
364.5 m ³	
7,500 in. ³	
127.5 in. ³	
15,000 in. ³	
390 m ³	
160 m ³	
349.22 cm ³	

MIDDLE SCHOOL MATH WITH PIZZAZZ! BOOK D
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 D-69
 TOPIC 5-4: Volume of Prisms

Page 3

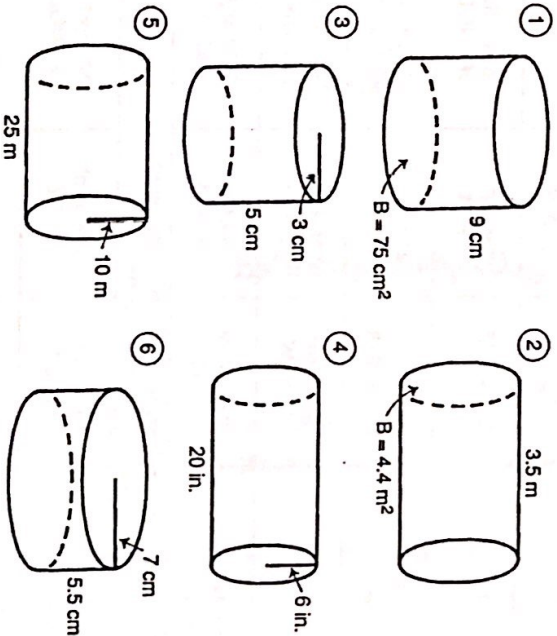
★ TRIVIA TEST ★

1. What Is the Best Way to Paint a Rabbit?
2. What Candy Do Kids Eat on the Playground?

4 7 2 8 8 3 11 5 10 1 11 3 6
 11 5 9 5 10 10 1 7 5 9 5 10

Do each exercise and find your answer in the answer column. Write the letter of the answer above the exercise number each time it appears in the code. Use 3.14 for π .

1. Find the volume of each cylinder.



7. $r = 8 \text{ in.}$
 $h = 3 \text{ in.}$
8. $r = 2.5 \text{ mm}$
 $h = 60 \text{ mm}$
9. $d = 10 \text{ m}$
 $h = 7.2 \text{ m}$

10. Shawn is making a candle using a cylindrical mold with a radius of 2 cm and a height of 30 cm. How many cubic centimeters of wax are needed for the candle?

11. A mug in the shape of a cylinder has a base with a radius of 4 cm. How many milliliters of liquid does it hold if filled to a height of 9 cm? (Hint: 1 cm³ holds 1 mL.)

Answers	
(M)	814.13 cm ³
(C)	565.2 m ³
(N)	381.36 mL
(A)	141.3 cm ³
(B)	14.8 m ³
(I)	602.88 in. ³
(P)	675 cm ³
(U)	7,490 m ³
(H)	1,177.5 mm ³
(R)	452.16 mL
(W)	2,260.8 in. ³
(L)	382.8 cm ³
(T)	15.4 m ³
(Y)	846.23 cm ³
(O)	717.8 in. ³
(S)	376.8 cm ³
(G)	1,224.5 mm ³
(E)	7,850 m ³
(D)	614.2 m ³

TOPIC 5-g: Volume of Cylinders

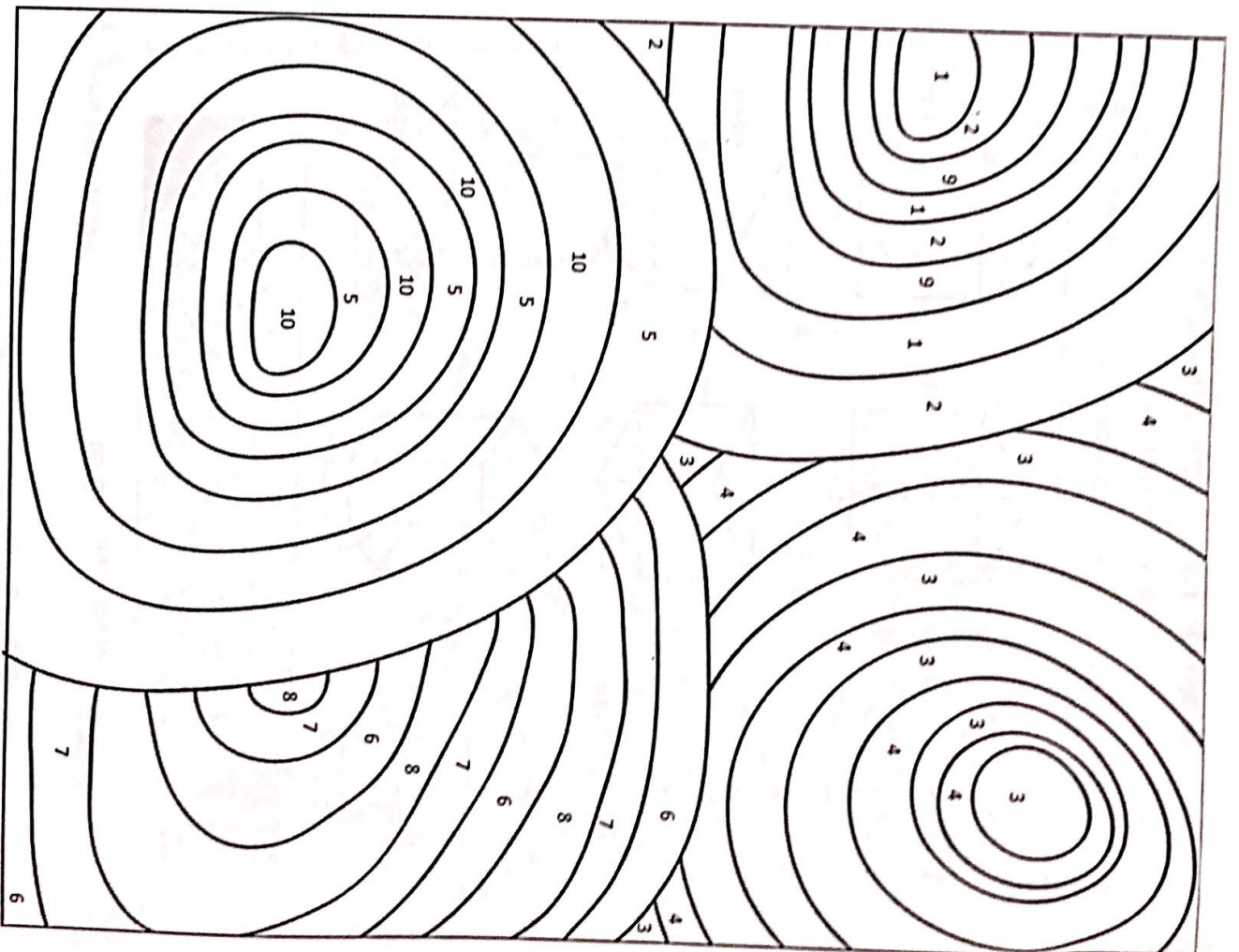
D-70

MIDDLE SCHOOL MATH WITH PIZZAZZ! BOOK D
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Volume {Prisms & Cylinders}

Solve each problem. Find your answer in one of the three answer boxes. Find the problem number on the coloring page and color each section with the number the color that corresponds to your answer.

#	Answer 1	Answer 2	Answer 3
Find the volume of each cylinder. Round to the nearest hundredth.			
1	radius = 6 cm height = 14 cm	1,582.56 cm ³ YELLOW	84 cm ³ ORANGE
2	radius = 9.4 ft. height = 6 ft.	277.45 ft. ³ RED	56.4 ft. ³ PINK
3	diameter = 12 in. height = 10 in.	4,521.6 in. ³ DARK BLUE	452.16 in. ³ BLACK
4	diameter = 7 m height = 6.2 m	38.47 m ³ YELLOW	238.48 m ³ BLACK
5	radius = 4.9 mi. height = 13.6 mi.	1,025.32 mi. ³ PURPLE	66.64 mi. ³ BLACK
Find the volume of each cube or rectangular prism. Round to the nearest hundredth.			
6	Cube side = 6 mm	36 mm ³ BLACK	216 mm ³ WHITE
7	Rectangular Prism length = 6 in., width = 4 in. height = 10 in.	240 in. ³ PINK	20 in. ³ RED
8	Rectangular Prism length = 2.6 m, width = 4.8 m height = 9.3 m	12.48 m ³ WHITE	16.7 m ³ ORANGE
9	Cube side = 10.3 ft.	1,092.73 ft. ³ RED	30.9 ft. ³ PURPLE
10	Rectangular Prism length = $4\frac{1}{2}$ cm, width = $6\frac{3}{4}$ cm height = $9\frac{1}{2}$ cm	30.38 cm ³ BLACK	285.53 cm ³ DARK BLUE

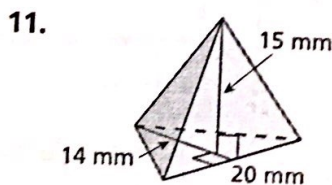
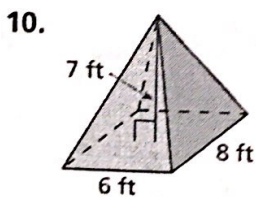
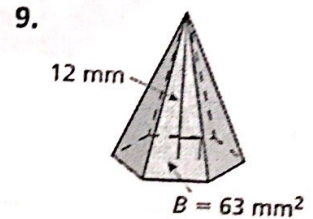
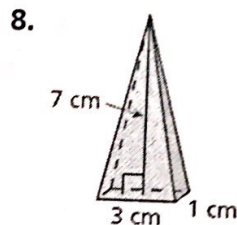
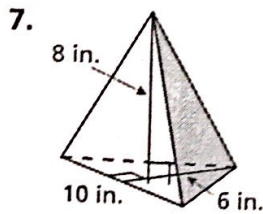
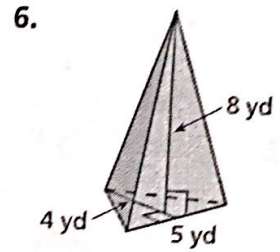
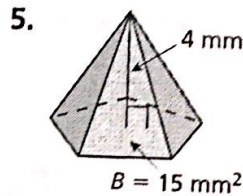
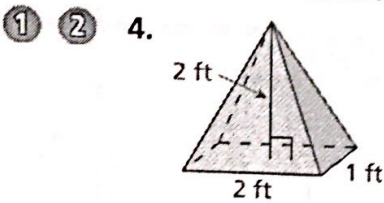


Vocabulary and Concept Check

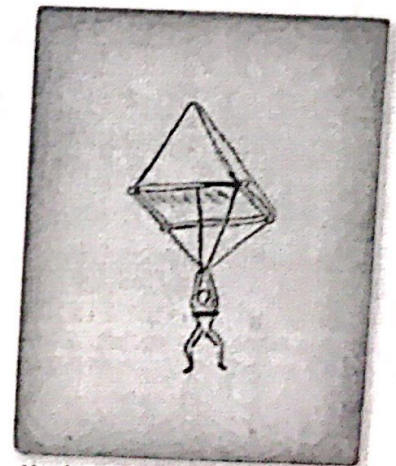
- 1. WRITING** How is the formula for the volume of a pyramid different from the formula for the volume of a prism?
- 2. OPEN-ENDED** Describe a real-life situation that involves finding the volume of a pyramid.
- 3. REASONING** A triangular pyramid and a triangular prism have the same base and height. How many times greater is the volume of the prism than the volume of the pyramid?

Practice and Problem Solving

Find the volume of the pyramid.



12. **PARACHUTE** In 1483, Leonardo da Vinci designed a parachute. It is believed that this was the first parachute ever designed. In a notebook, he wrote "If a man is provided with a length of gummed linen cloth with a length of 12 yards on each side and 12 yards high, he can jump from any great height whatsoever without injury." Find the volume of air inside Leonardo's parachute.

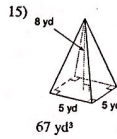
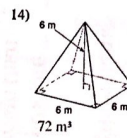
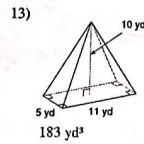
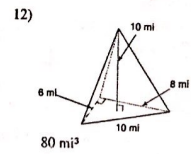
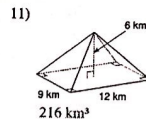
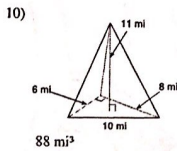
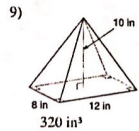
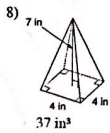
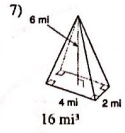
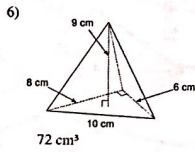
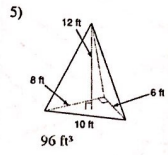
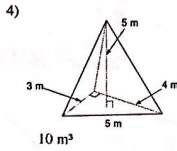
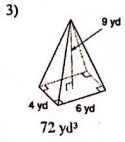
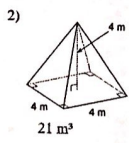
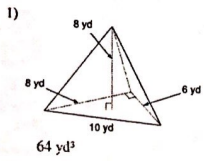


Not drawn to scale

Da Vinci

Name _____

Find the volume of each figure. Round your answers to the nearest whole, if necessary.

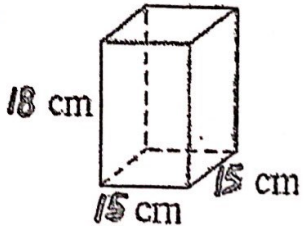
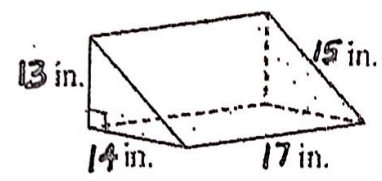
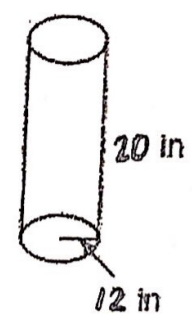
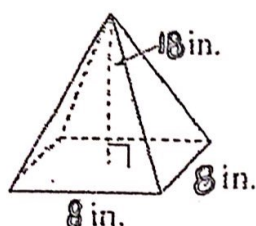
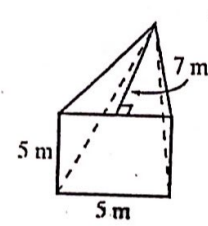
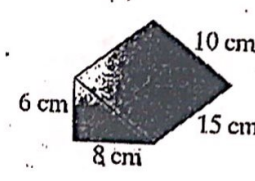

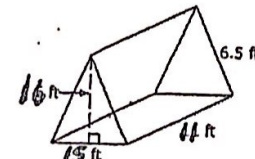
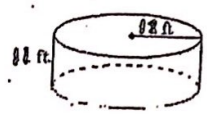


Page 6

Name: _____ Date: _____

Study Guide
Surface Area and Volume

Find the Surface Area AND Volume of each Figure:

<p>1.)</p> 	<p>2.)</p> 	<p>3.)</p> 
<p>4.)</p> 	<p>5.)</p> 	<p>6.)</p> 
<p>7.)</p> <p>22. A candy box is in the shape of a triangular prism. It has dimensions of $w = 6$ cm, $x = 4$ cm, and $y = 18$ cm.</p> 	<p>8.)</p> <p>What is the volume of this triangular right prism?</p> 	<p>9.)</p> <p>3. A cylinder has a height of 8 feet and a radius of 2 feet.</p> 

10. The walls in a room are being painted. Four cans of paint will cover 480 ft^2 . How many cans will be needed to cover 840 ft^2 ?
- A 8 cans
 - B 7 cans
 - C 5 cans