


DOOR

Promethean Board




2/28

Period 3 - Math 7

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Michael Keira Maddox 

  Charlotte Kate





Mrs.
Fowley

1. Check 7.1 Exercises
2. 7.3 notes discussion and Exercises Pp.314-315
3. Homework: More 7.3 Exercises and 7.5 Volumes of Composite Solids notes Pg.326, Example 1 only!

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Period 5 - Math 7

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Esmeralda Jeremy 

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Mrs.
Fowley

1. Check 7.1 Exercises
2. 7.3 notes discussion and Exercises Pp.314-315
3. Homework: More 7.3 Exercises and 7.5 Volumes of Composite Solids notes Pg.326, Example 1 only!

Period 6 - Math 7

Kaleb	X	Alena Anjula
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Simone JP	X	X
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X	Toby	Taz Jonathon
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Hunter Liyah	X	X
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X	X	Emily David
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Sebastian Nick	X	X
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X	X	X	X
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X	X	X
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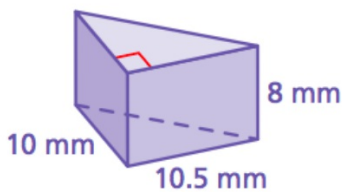
Mrs. Fowley

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7.1 Exercises #9, 11, 15, & 19

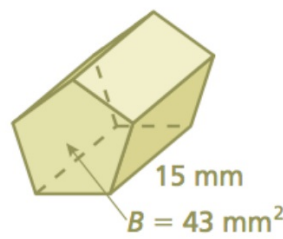
Find the volume of the prism.

9.



$$\begin{aligned}
 V &= B \cdot h \\
 &= \frac{1}{2} \cdot 10.5 \cdot 10 \cdot 8 \\
 &= \boxed{420 \text{ mm}^3}
 \end{aligned}$$

11.



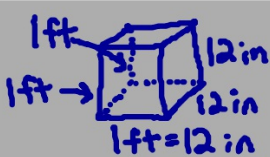
$$\begin{aligned}
 V &= B \cdot h \\
 &= 43 \cdot 15 \\
 &= \boxed{645 \text{ mm}^3}
 \end{aligned}$$

43
$\times 15$
<hr/>
215
$+ 430$
<hr/>
645

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

$$V = 9 \cdot 2.5 \cdot 10 = \boxed{225 \text{ in}^3}$$

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

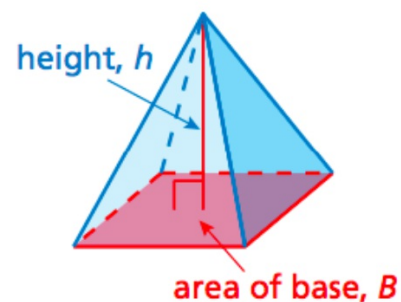


$$\begin{aligned}
 12 \cdot 12 &= 144 \\
 &\times 12 \\
 &\hline
 &288 \\
 + 1440 & \\
 \hline
 &= \boxed{1,728 \text{ in}^3}
 \end{aligned}$$

Key Idea

Volume of a Pyramid

Words The volume V of a pyramid is one-third the product of the area of the base and the height of the pyramid.

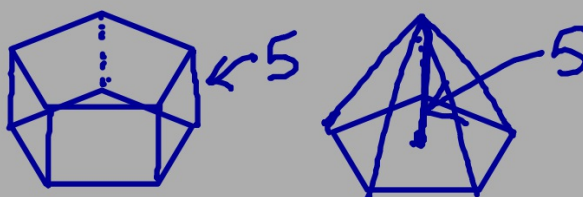


Algebra

$$V = \frac{1}{3}Bh$$

Area of base

Height of pyramid



EXAMPLE 1 Finding the Volume of a Pyramid

Find the volume of the pyramid.

$$V = \frac{1}{3}Bh$$

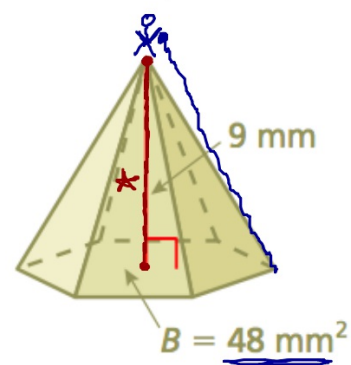
Write formula for volume.

$$= \frac{1}{3}(48)(9)$$

Substitute.

$$= 144$$

Multiply.



∴ The volume is 144 cubic millimeters.

$$144 \text{ mm}^3$$

EXAMPLE 2 Finding the Volume of a Pyramid

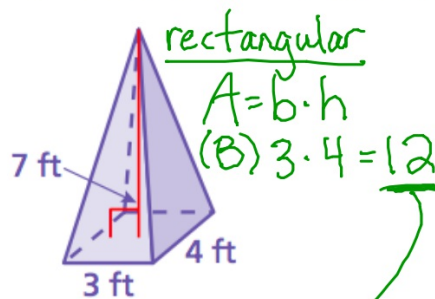
Find the volume of the pyramid.

Study Tip

The area of the base of a rectangular pyramid is the product of the length l and the width w .

You can use $V = \frac{1}{3}lwh$ to find the volume of a rectangular pyramid.

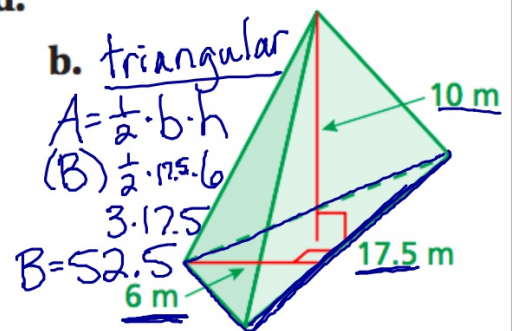
a.



$$\begin{aligned} V &= \frac{1}{3}Bh \\ &= \frac{1}{3}(3)(4)(7) \\ &= 28 \text{ ft}^3 \end{aligned}$$

••• The volume is 28 cubic feet.

b. triangular



$$\begin{aligned} V &= \frac{1}{3}Bh \\ &= \frac{1}{3}\left(\frac{1}{2}\right)(17.5)(6)(10) \\ &= 175 \text{ m}^3 \end{aligned}$$

••• The volume is 175 cubic meters.

EXAMPLE 3 Real-Life Application

(a) The volume of sunscreen in Bottle B is how many times the volume in Bottle A?

(b) Which is the better buy?

a. Use the formula for the volume of a pyramid to estimate the amount of sunscreen in each bottle.



Bottle A

$$V = \frac{1}{3}Bh$$

$$= \frac{1}{3}(2)(1)(6)$$

$$= 4 \text{ in.}^3$$

Bottle B

$$V = \frac{1}{3}Bh$$

$$= \frac{1}{3}(3)(1.5)(4)$$

$$= 6 \text{ in.}^3$$

So, the volume of sunscreen in Bottle B is $\frac{6}{4}$, or 1.5 times the volume in Bottle A.

Handwritten notes:
 $\frac{4x = 6}{4} \mid \frac{6}{4}$
 $x = 1\frac{1}{2}$ or 1.5

b. Find the unit cost for each bottle.

Bottle A *per 1*

$$\begin{aligned}\frac{\text{cost}}{\text{volume}} &= \frac{\$9.96}{4 \text{ in.}^3} \\ &= \frac{\$2.49}{\underline{1 \text{ in.}^3}}\end{aligned}$$

Bottle B

$$\begin{aligned}\frac{\text{cost}}{\text{volume}} &= \frac{\$14.40}{6 \text{ in.}^3} \\ &= \frac{\$2.40}{\underline{1 \text{ in.}^3}}\end{aligned}$$

❖ The unit cost of Bottle B is less than the unit cost of Bottle A. So, Bottle B is the better buy.

Geometry

Step 1: identify figure

2: find? SA, Volume, Area, Perimeter, etc.

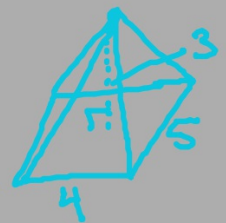
3: formula

(Pyramid, Volume: $V = \frac{1}{3} Bh$)

4: identify base, formula

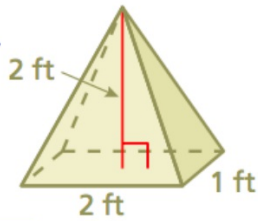
5: substitute values

6: solve - don't forget units! units^3



Find the volume of the pyramid.

4.



$$V = \frac{1}{3} Bh$$

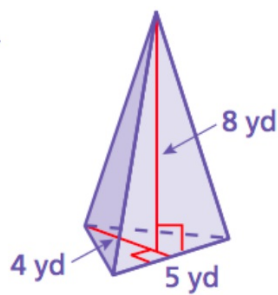
↳ rectangle
b · h

$$V = \frac{1}{3} \cdot 2 \cdot 1 \cdot 2$$

$$V = \frac{1}{3} \cdot 2 \cdot 2$$

$$V = \boxed{\frac{1}{3} \text{ or } 1.\bar{3} \text{ ft}^3}$$

6.



$$V = \frac{1}{3} Bh$$

↳ triangle
 $\frac{1}{2} \cdot b \cdot h$

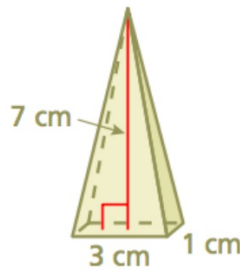
$$V = \frac{1}{3} \cdot \frac{1}{2} \cdot 5 \cdot 4 \cdot 8$$

$$V = \frac{1}{3} \cdot 10 \cdot 8$$

$$V = \frac{1}{3} \cdot 80$$

$$V = \boxed{26\frac{2}{3} \text{ or } 26.\bar{6} \text{ yd}^3}$$

8.



$$V = \frac{1}{3} Bh$$

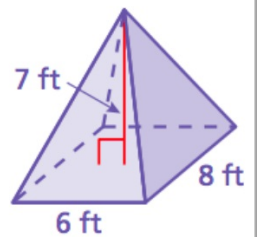
↳ rectangle
b · h

$$V = \frac{1}{3} \cdot 3 \cdot 1 \cdot 7$$

$$V = \frac{1}{3} \cdot 3 \cdot 7$$

$$V = \boxed{7 \text{ cm}^3}$$

10.



$$V = \frac{1}{3} Bh$$

↳ rectangle
b · h

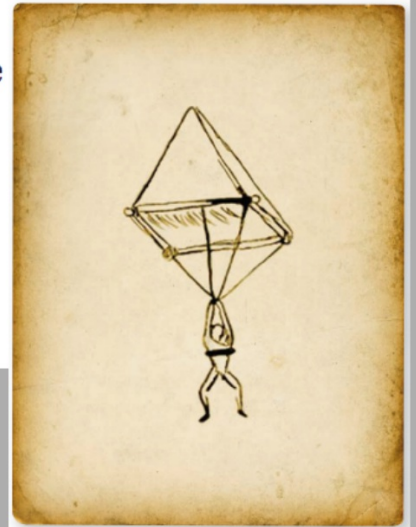
$$V = \frac{1}{3} \cdot 6 \cdot 8 \cdot 7$$

$$V = \frac{1}{3} \cdot 48 \cdot 7$$

$$V = 16 \cdot 7$$

$$V = \boxed{112 \text{ ft}^3}$$

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

Square pyramid, volume

$$V = \frac{1}{3} Bh$$

$$V = \frac{1}{3} \cdot b \cdot h \cdot h$$

$$V = \frac{1}{3} \cdot 12^2 \cdot 12$$

$$V = \frac{1}{3} \cdot 144 \cdot 12$$

$$V = \boxed{576 \text{ yd}^3}$$

$$\begin{array}{r} 144 \\ \times 4 \\ \hline 576 \end{array}$$

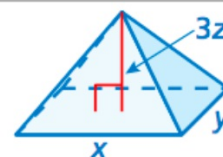
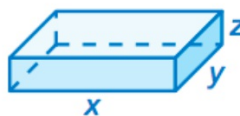
Copy and complete the table to find the area of the base B or the height h of the pyramid.

	Volume, V	Area of Base, B	Height, h
13.	60 in. ³	<u>30 in²</u>	6 in.
14.	144 cm ³	48 cm ²	<u>9 cm</u>

$$\begin{aligned}
 13. \quad V &= \frac{1}{3}Bh \\
 60 &= \frac{1}{3} \cdot B \cdot 6 \\
 \frac{60}{2} &= \frac{2B}{2} \\
 30 &= B
 \end{aligned}$$

$$\begin{aligned}
 14. \quad V &= \frac{1}{3}Bh \\
 144 &= \frac{1}{3} \cdot 48 \cdot h \\
 \frac{144}{16} &= \frac{16 \cdot h}{16} \\
 9 &= h
 \end{aligned}$$

20. **Reasoning** Do the two solids have the same volume? Explain.



$$V = B \cdot h$$

$$V = x \cdot y \cdot z$$

$$V = \frac{1}{3} B h$$

$$V = \frac{1}{3} \cdot x \cdot y \cdot \underline{3} \cdot \underline{z}$$

$$V = 1 \cdot x \cdot y \cdot z$$

$$V = x \cdot y \cdot z$$

Yes; same simplified formula