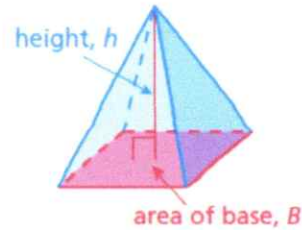


14.5 Volume of Pyramids p.616

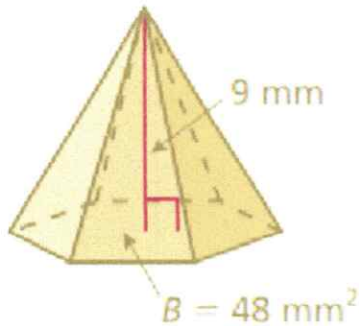
The volume of a pyramid is one-third the product of the area of the base and the height of the pyramid.

$$V = \frac{1}{3}BH \quad \text{or} \quad V = \frac{BH}{3}$$



B = the **area** of the **BASE** of the pyramid

H = the **height** of the **pyramid** (not the slant height)



For this pyramid, the area of the Base is given since it is a hexagon. To find the volume, simply multiply the Base (48) by the Height (9) and multiply by 1/3.

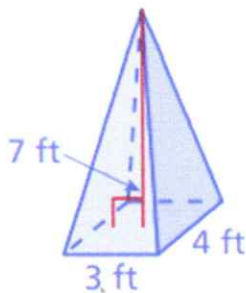
$$\begin{aligned} &= \frac{1}{3}(48)(9) && \text{Substitute.} \\ &= 144 && \text{Multiply.} \end{aligned}$$

$$\text{or} \quad \frac{(48)(9)}{3} = 144 \text{ mm}^3$$

❖ The volume is 144 cubic millimeters.

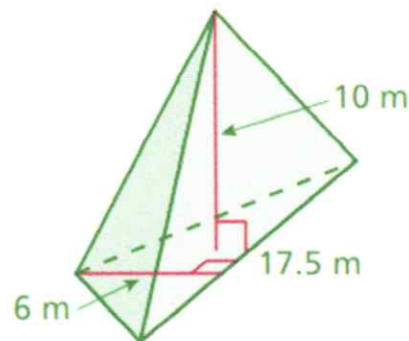
Find the volume of each pyramid:

a.



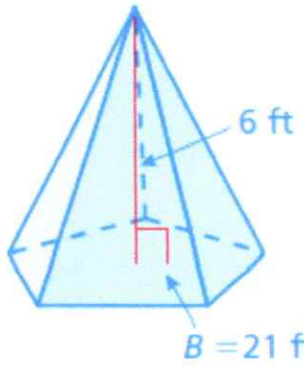
$$\begin{aligned} \text{Base: } & \begin{array}{|c|} \hline 4 \\ \hline \end{array} \begin{array}{|c|} \hline 3 \\ \hline \end{array} \\ & 3 \cdot 4 = 12 \overset{H}{(7)} = 84 \\ & \frac{84}{3} = \boxed{28 \text{ ft}^3} \end{aligned}$$

b.



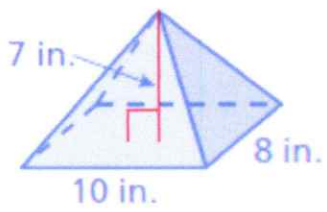
$$\begin{aligned} \text{Base: } & \begin{array}{|c|} \hline 6 \\ \hline \end{array} \begin{array}{|c|} \hline 17.5 \\ \hline \end{array} \\ & \frac{17.5(6)}{2} = 52.5 \overset{H}{(10)} = \\ & \frac{525}{3} = \boxed{175 \text{ m}^3} \end{aligned}$$

1.



$$\frac{21(6)}{3} = \boxed{42 \text{ ft}^3}$$

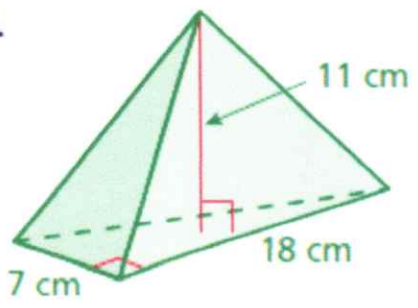
2.



$$\frac{10(8)(7)}{3} = \boxed{186\frac{2}{3} \text{ in}^3}$$

* don't use repeating decimals

3.



$$\frac{7(18)(11)}{3} = \boxed{231 \text{ cm}^3}$$

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

b) Which is the better buy?

	<u>Bottle A</u>	<u>Bottle B</u>
a)	$\frac{(2)(1)(6)}{3}$	$\frac{3(1.5)(4)}{3}$
	4 in^3	6 in^3
	$\frac{6}{4} = 1.5 \text{ times bigger}$	

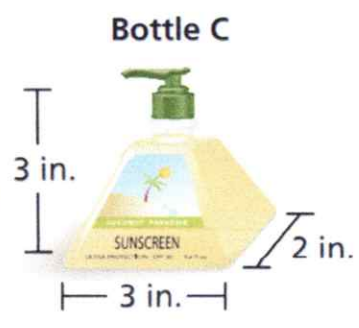


b)	$\frac{9.96}{4}$	$\frac{14.40}{6}$
	$2.49/\text{in}$	$\$2.40/\text{in}$

Bottle B is the Better Buy

c) Bottle C is on sale for \$13.20 Is Bottle C a better buy than Bottle B? Explain.

$$\frac{3(2)(3)}{3} = 6 \text{ in}^3 \quad \frac{13.20}{6} = \$2.20/\text{in}$$



Yes, Bottle C has the same volume as Bottle B, however, it costs \$0.20 less per unit, so Bottle C is the better buy!