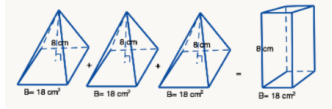


COMPARING THE VOLUME OF A PYRAMID TO A PRISM

The volume of an object is the amount of space occupied by an object.



The volume of 3 pyramids is equal to the volume of 1 prism with the same base and height.

Volume of a Prism = $l \times w \times h$

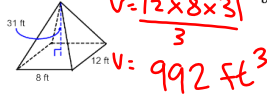
Therefore,

Volume of a Pyramid = $\frac{l \times w \times h}{3}$

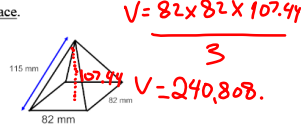
Example 1

Find the volume of the following pyramids, to one decimal place.

a)

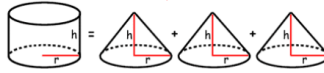


b)



COMPARING THE VOLUME OF A CONE TO A CYLINDER

The volume of 3 cones is equal to the volume of 1 cylinder with the same radius and height.



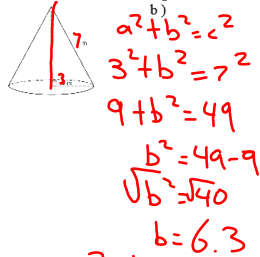
Therefore,

Volume of a Cone = $\frac{\pi r^2 \times h}{3}$

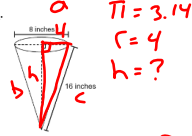
Example 2

Find the volume of the following cones, to one decimal place.

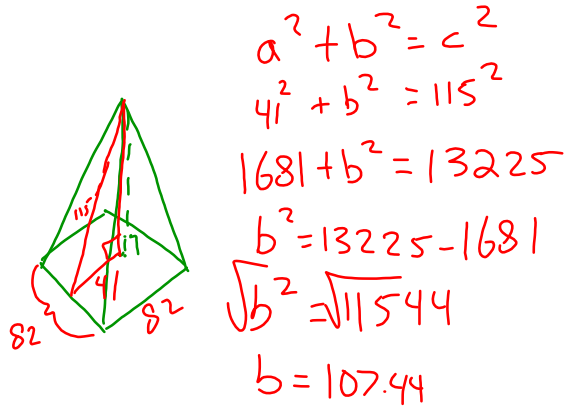
a)



$V = \frac{\pi r^2 \times h}{3}$
 $V = \frac{3.14 \times 3^2 \times 6.3}{3}$
 $V = \frac{3.14 \times 9 \times 6.3}{3}$
 $V = 59.3 \text{ m}^3$



$V = \frac{\pi r^2 \times h}{3}$
 $V = \frac{3.14 (4^2) (15.5)}{3}$
 $V = \frac{3.14 (16) (15.5)}{3}$
 $V = 259.6 \text{ in}^3$



Example 3

Determine the volume of the following composite figures, to one decimal place.

- a) A local farmer needs to fill his new grain bin shown in the diagram below. Determine the volume of feed required to fill the grain bin.

$$V = \text{Cylinder}$$

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

$$V = 3.14(10^2)(15)$$

$$V = 3.14(100)(15)$$

$$V = 4710$$

$$V = \text{cone}$$

$$V = \frac{\pi r^2 \times h}{3}$$

$$V = \frac{3.14(10^2)(6)}{3}$$

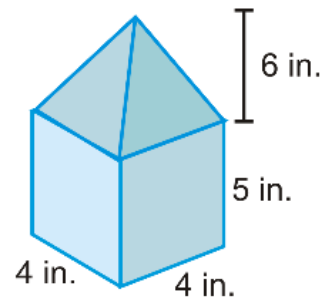
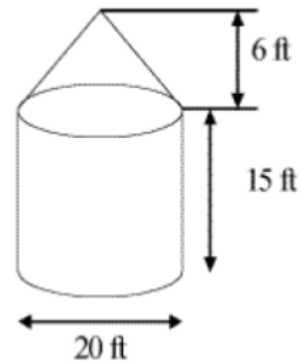
$$V = \frac{3.14(100)(6)}{3}$$

$$V = 628$$

$$\text{Total volume} = 4710 + 628$$

$$= 5338$$

$\therefore 5338 \text{ ft}^3$ will fit in the grain bin



CLASSWORK/HOMEWORK

Please complete the following questions, neatly on a lined piece of paper.

Volume of Pyramids: Page 367-371 #3, 6, 10, 11

Volume of Cones: Page 394-397 #1, 3a, 10

Include the correct units.