

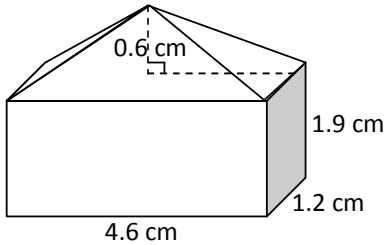
MATH 10 – UNIT 1 – LESSON 10 – 3-D COMPOSITE OBJECTS
MEASUREMENT UNIT

Name: Key

Composite Object: A object made up of 2 or more distinct objects.

Volume of a Composite Object: the sum of the volumes of the individual parts!!

Example #1: Determine the volume of this composite object to the nearest tenth of a cubic metre.



Volume of Rectangular Pyramid

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

$$V = \frac{1}{3} (4.6)(1.2)(0.6) = 1.1$$

Volume of Rectangular Prism

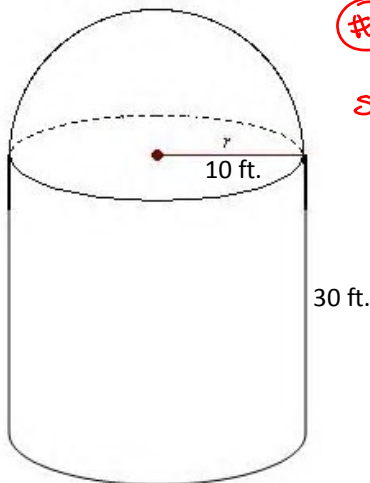
$$V = lwh$$

$$V = (4.6)(1.2)(1.9) = 10.5$$

Volume of composite object = $1.1 + 10.5 = 11.6 \text{ cm}^3$

Surface Area of a Composite Object: the sum of the areas of the showing faces

Example #2: Find the surface area of the following object to the nearest tenth of a square foot.



#1 Curved surface of hemisphere

$$\begin{aligned} SA &= \frac{SA_{\text{sphere}}}{2} \\ &= \frac{4\pi r^2}{2} \\ &= 2\pi r^2 \\ &= 2\pi(10^2) \\ &= 200\pi \end{aligned}$$

#2 Curved surface of cylinder

$$\begin{aligned} SA &= 2\pi rh \\ &= 2\pi(10)(30) \\ &= 600\pi \end{aligned}$$

#3 1 base of cylinder

$$\begin{aligned} SA &= \pi r^2 \\ &= \pi(10^2) \\ &= 100\pi \end{aligned}$$

$$\begin{aligned} SA_{\text{composite object}} &= 200\pi + 600\pi + 100\pi \\ &= 900\pi \\ &= 2827.4 \\ &= 2827 \frac{4}{10} \end{aligned}$$

$2827 \frac{2}{5} \text{ ft.}^2$