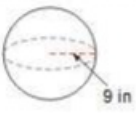
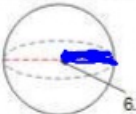


Name: _____ Date: _____ Period: _____	Volume of a Sphere
What is Volume? What formula do we use to find the volume of a sphere?	$V = \frac{4}{3}\pi r^3 \quad \text{or} \quad V = \frac{4\pi r^3}{3}$
Find the volume of the following sphere. 	$V = \frac{4\pi 9^3}{3}$ <p style="text-align: center;"> 4 π 9 ^ 3 </p> <p style="text-align: center;"> Space π ÷ </p> <p style="text-align: center;"> 3 </p> <p style="text-align: center;"> V = 972π or 3053.6 </p>
Find the volume of the following sphere.  $\frac{6.2}{2} = 3.1 = r$	$V = \frac{4\pi 3.1^3}{3}$ <p style="text-align: center;"> 4 π 3.1 ^ 3 </p> <p style="text-align: center;"> Space π ÷ </p> <p style="text-align: center;"> 3 </p> <p style="text-align: center;"> V = 124.8 </p>
Given the volume of a sphere is 124 cm^3 , find the radius.	$V = \frac{4\pi r^3}{3} \quad 3 \cdot 124 = \frac{4\pi r^3}{3}$ $372 = \frac{4\pi r^3}{\cancel{4\pi}}$ <p style="text-align: center;"> 3 2nd ^ 29.6 </p> <p style="text-align: center;"> 3 29.6 </p> <p style="text-align: center;"> 3.1 = r </p>
Given the volume of a sphere is $36\pi \text{ ft}^3$, find the diameter.	$V = \frac{4\pi r^3}{3} \quad 3 \cdot 36\pi = \frac{4\pi r^3}{3}$ $108\pi = \frac{4\pi r^3}{\cancel{4\pi}}$ <p style="text-align: center;"> 3 2nd ^ 27 </p> <p style="text-align: center;"> 3 = r </p>

Composite Figures

What are our Volume formulas?

Cylinder



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

Prism



$$V = (lwh)$$

Sphere



$$V = \frac{4\pi r^3}{3}$$

Cone



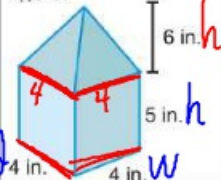
$$V = \frac{\pi r^2 h}{3}$$

Pyramid



$$V = \frac{(lwh)}{3}$$

Find the volume of the following composite figure.



Prism $V = (lwh)$

$$V = 4 \cdot 4 \cdot 5$$

$$V = 80$$

Pyramid $V = \frac{(lwh)}{3}$

$$V = \frac{4 \cdot 4 \cdot 6}{3}$$

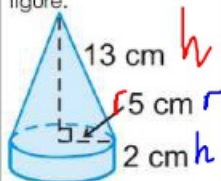
$$V = 32$$

ADD

$$\begin{array}{r} 80 \\ 32 \\ \hline \end{array}$$

$$\boxed{112 \text{ in}^3}$$

Find the volume of the following composite figure.



Cylinder $V = \pi r^2 h$

$$V = \pi 5^2 \cdot 2$$

$$V = 50\pi \text{ or } 157.1$$

(EXACT) (Rounded)

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

$$V = \frac{\pi 5^2 \cdot 13}{3}$$

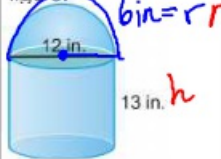
$$V = 340.3$$

ADD

$$\begin{array}{r} 157.1 \\ 340.3 \\ \hline 497.4 \text{ cm}^3 \end{array}$$

Rounded

Find the volume of the following composite figure.



Sphere $\frac{4\pi r^3}{3}$

$$V = \frac{4\pi 6^3}{3}$$

$$288\pi \div 2 = 144\pi \text{ (EXACT)}$$

Cylinder $V = \pi r^2 h$

$$V = \pi 6^2 \cdot 13$$

$$V = 468\pi$$

(EXACT)

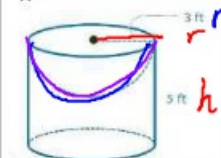
ADD

$$\begin{array}{r} 144\pi \\ 468\pi \\ \hline \end{array}$$

$$\boxed{612\pi \text{ m}^3}$$

(EXACT)

Find the volume of the following composite figure.



Sphere $\frac{4\pi r^3}{3}$

$$V = \frac{4\pi 3^3}{3}$$

$$V = 36\pi \div 2 = 18\pi \text{ (EXACT)}$$

Cylinder $V = \pi r^2 h$

$$V = \pi 3^2 \cdot 5$$

$$V = 45\pi$$

(EXACT)

Subtract

$$\begin{array}{r} 45\pi \\ -18\pi \\ \hline \end{array}$$

$$\boxed{27\pi \text{ ft}^3}$$

(EXACT)