

## Composite objects Sheet.

1. cylinder +  $\frac{1}{2}$  sphere

$$S.A = 2\pi r^2 + 2\pi rh$$

$$r = 3 \text{ in}$$

$$= 2\pi(3)^2 + 2\pi(3)(14)$$

$$= 320.4$$

$$S.A = 4\pi r^2 \text{ (full sphere)}$$

$$\frac{1}{2} \text{ sphere} \Rightarrow 2\pi r^2$$

$$= 56.5$$

$$\text{Total: } 320.4 + 56.5$$

$$= 376.5$$

overlap  $\rightarrow$  top of cylinder

$$\pi r^2 = \pi(3)^2$$

$$= 28.3$$

$$376.5 - 28.3 = 348.2 \text{ in}^2$$

2. Volume

$$\text{cone: } \frac{\pi r^2 h}{3}$$

$$\frac{\pi(2.5)^2(7.5)}{3}$$

$$= 49.1$$

$$\frac{1}{2} \text{ sphere} = \frac{4\pi r^3}{3} \div 2$$

$$= \frac{4\pi(2.5)^3}{3} \div 2$$

$$= 65.4 \div 2$$

$$= 32.7$$

$$\text{Total} = 49.1 + 32.7$$

$$= 81.8 \text{ cm}^3$$

3.  $\frac{1}{2}$  cylinder + rectangular prism

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

$$= \pi (4)^2 (20) \div 2$$

$$= 1005.3 \div 2$$

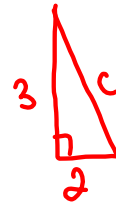
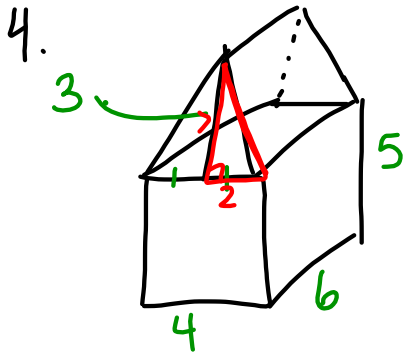
$$= 502.7$$

$$V = lwh$$

$$= (8)(8)(20)$$

$$= 1280$$

Total: 1782.7 in<sup>3</sup>



$$3^2 + 2^2 = c^2$$

$$9 + 4 = c^2$$

$$13 = c^2$$

$$\sqrt{13} = c$$

$$3.6 = c$$

Front & Back  
 $\frac{2 \times (l \times w)}{2 \times (4 \times 5)}$   
 $= 40$

Sides  
 $\frac{2 \times (l \times w)}{2 \times (6 \times 5)}$   
 $= 60$

Front / Back triangle  
 $\frac{2 \times (\frac{bh}{2})}{2 \times (\frac{4 \times 3}{2})}$   
 $= 12$

2 Sides of the roof  
 $\frac{2 \times (l \times w)}{2 \times (6 \times 3.6)}$   
 $= 43.2$

Total:  $43.2 + 12 + 40 + 60$   
 $= 155.2 \text{ ft}^2$