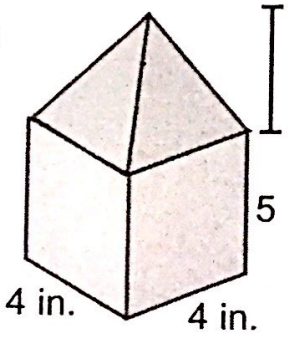
Name: KEY

Worksheet: Volume Practice

You must show your work for each problem!!!

1)



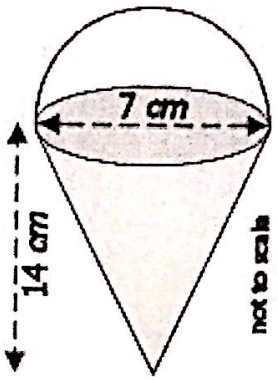
V = Prism + Pyramid

$V = 4\cdot4\cdot5 + \frac{1}{3}\cdot4\cdot4\cdot6$

$V = 80 + 32$

$V = 112 in^3$

2)



V = cone + $\frac{1}{2}$(sphere)

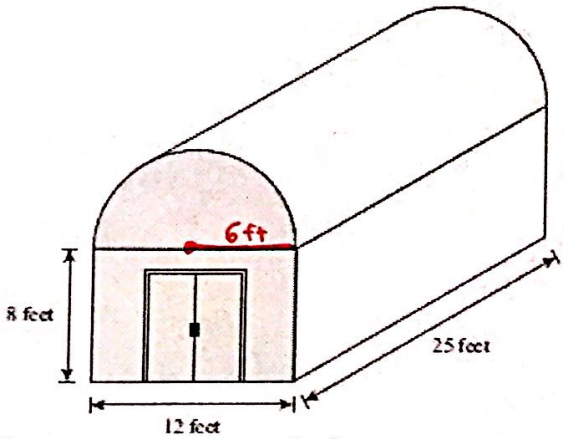
$V = \frac{1}{3}\pi\cdot3.5^2\cdot14 + \frac{1}{2}(\frac{4}{3}\pi\cdot3.5^3)$

$V \approx 179.6 + \frac{1}{2}(179.6)$

$V \approx 179.6 + 89.8$

$V \approx 269.4\ cm^3$

3)



V = Prism + $\frac{1}{2}$(Cylinder)

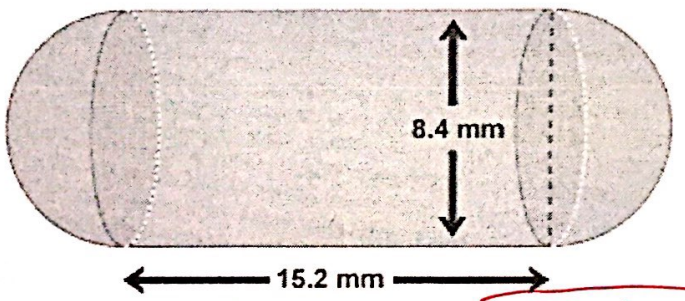
$V = 8\cdot12\cdot25 + \frac{1}{2}(\pi\cdot6^2\cdot25)$

$V \approx 2400 + \frac{1}{2}(2827.4)$

$V \approx 2400 + 1413.7$

$V \approx 3813.7 ft^3$

4)



V = Cylinder + Sphere (2 half spheres = one whole sphere)

$V = \pi\cdot4.2^2\cdot15.2 + \frac{4}{3}\pi\cdot4.2^3$

$V \approx 842.3 + 310.3$

$V \approx 1152.6\ mm^3$

5) The volume of a cylinder is 2156π in^3. The height is 11 in. Find the radius.

$V = \pi r^2 h$

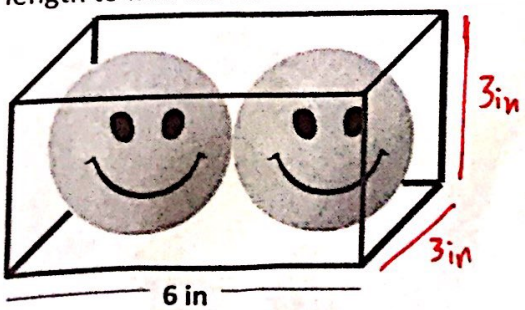
$\frac{2156\cancel{\pi}}{11} = \frac{\cancel{\pi} r^2\cdot\cancel{11}}{\cancel{11}} \rightarrow 196 = r^2$

$r = 14 in$

check

$V = \pi\cdot14^2\cdot11 \xrightarrow{?} 2156\pi$

6) Below is a box with 2 smiley face balls inside. They fit snugly inside the box – the sides of each ball touch the top, bottom, front, back, and both sides of the box. What is the volume of the empty space in the box? (Hint: use the given length to find the diameter of a ball. This can help you find the other dimensions of the box)



V = Box − 2(sphere)

$V = 6\cdot3\cdot3 - 2(\frac{4}{3}\pi\cdot1.5^3)$

$V \approx 54 - 2(14.1372)$

$V \approx 54 - 28.2743$

$V \approx 25.7 in^3$