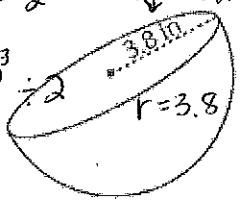
** It is important to note that just like estimating non perfect square roots, sometimes we can estimate the volume by using an estimated value (3.14) for π.

Practice: Find the volume of the figures below. For even numbers, use 3.14 for pi to estimate the volume. Hint: Half a sphere is called a hemisphere. What formula would you use to find the volume of a hemisphere?

1) hemisphere ($\frac{1}{2}$ a sphere)

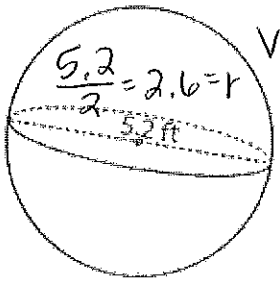
$V = \frac{4\pi r^3}{3} \div 2$

$V = \frac{4\pi(3.8)^3}{3} \div 2$



Volume = 114.87 in^3

2)



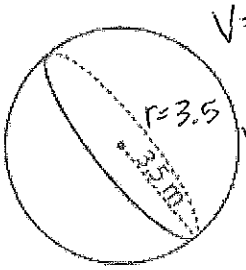
$\frac{5.2}{2} = 2.6 = r$

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

$V = \frac{4\pi(2.6)^3}{3}$

Volume = 73.58 ft^3

3)



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

$V = \frac{4\pi(3.5)^3}{3}$

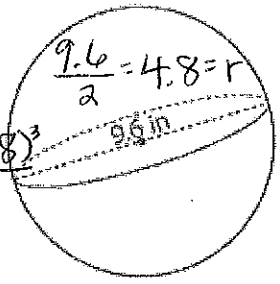
Volume = 179.5 m^3

4)

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

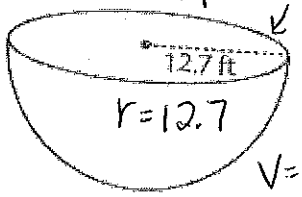
$\frac{9.6}{2} = 4.8 = r$

$V = \frac{4\pi(4.8)^3}{3}$



Volume = 463.01 in^3

5) hemisphere

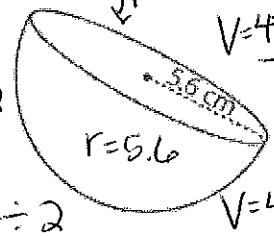


$V = \frac{4\pi r^3}{3} \div 2$

$V = \frac{4\pi(12.7)^3}{3} \div 2$

Volume = 4287.95 ft^3

6) hemisphere



$V = \frac{4\pi r^3}{3} \div 2$

$V = \frac{4\pi(5.6)^3}{3} \div 2$

Volume = 367.62 cm^3

In your own words, describe the relationships between the volume of cylinders, cones, and spheres.

All three figures have a circle as their base. One cylinder is equal in volume to 3 cones. One sphere is equal in volume to 2 cones.