Review for Quiz #7 - Volume of Cylinders, Cones, and Spheres

Name: _____ Class: _____

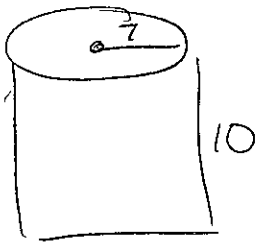
1.) Find the **exact** volume of a cylinder that has a radius of 7 and a height of 10.

$V = \pi r^2 h$

$V = \pi(7)^2(10)$

$V = \pi(49)(10)$

$V = 490\pi \text{ un}^3$



$r = 7$

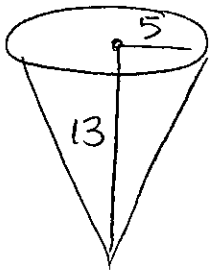
$h = 10$

2.) Find the volume of a cone that has a diameter of 10 inches and a height of 13 inches. Round to the nearest hundredth.

$d = 10$

$r = 5$

$h = 13$



$V = \frac{1}{3}\pi r^2 h$

$V = \frac{1}{3}\pi(5)^2(13)$

$V = \frac{1}{3}\pi(25)(13)$

$V = \frac{1}{3}\pi(325)$

$V \approx 340.34 \text{ in}^3$

3.) Find the volume of a sphere that has a diameter of 22 cm. Round to the nearest whole number.

$d = 22$

$r = 11$

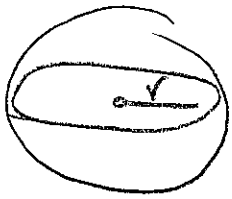
$V = \frac{4}{3}\pi(11)^3$

$V = \frac{4}{3}\pi(1331)$

$V \approx 5575 \text{ cm}^3$

4.) Find the volume of a sphere that has a radius of 8.1×10^6. Express the answer in scientific notation.

$r = 8.1 \cdot 10^6$



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

$V = \frac{4}{3}\pi (8.1 \cdot 10^6)^3$

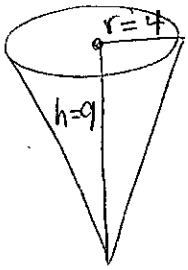
$V = \frac{4}{3}\pi (531.44 \cdot 10^{18})$

$V \approx 2226.094855 \cdot 10^{18}$

$V \approx 2.226094855 \cdot 10^{21} \approx \boxed{2.2 \cdot 10^{21}\ un^3}$

5.) There are two containers of soda. One is a cone with a diameter of 8 inches and a height of 9 inches and the second is a cylinder with a radius of 6 inches and a height of 7 inches.

a.) If you want the container with the most soda, which one would you choose? Your work must support your answer. Leave your answer as an **exact** answer.



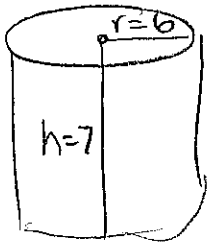
$V = \frac{1}{3}\pi r^2 h$

$V = \frac{1}{3}\pi (4)^2 (9)$

$V = \frac{1}{3}\pi (16)(9)$

$V = \frac{1}{3}\pi (144)$

cone $\rightarrow V = 48\pi\ in^3$



$V = \pi r^2 h$

$V = \pi (6)^2 (7)$

$V = 252\pi\ in^3$

↑ cylinder

CYLINDER

b.) How much more soda does the larger container have than the smaller container? Leave your answer as an **exact** answer.

$252\pi - 48\pi = \boxed{204\pi\ in^3}$