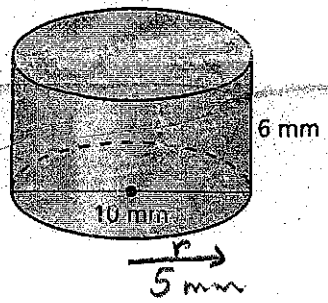
Name: ANSWERS Date: _____

8th Grade BLUE CHAPTER 8 Practice 2

Find the VOLUME of the solid. Round your answer to the nearest tenth. (4pts each)

1)



$V = \pi r^2 h$

$= 3.14 \cdot 5^2 \cdot 6$

$= 3.14 \cdot 150$

$$\begin{array}{r} 150 \\ \times\ 3.14 \\ \hline 1600 \\ 1500 \\ +\ 45000 \\ \hline 471.00 \end{array}$$

Answer: $471.0\ mm^3$

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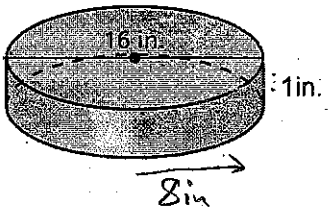
2)



$V = \pi r^2 h$

$= 3.14 \cdot 8^2 \cdot 1$

$$\begin{array}{r} 3.14 \\ \times\ 64 \\ \hline 1256 \\ +\ 18840 \\ \hline 200.96 \end{array}$$

200.96
201.0

Answer: $201.0\ in^3$

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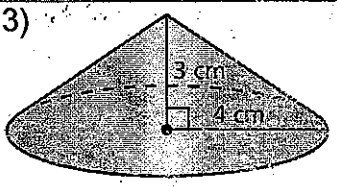
3)



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

$V = \dfrac{3.14 \cdot 4^2 \cdot 3}{3}$

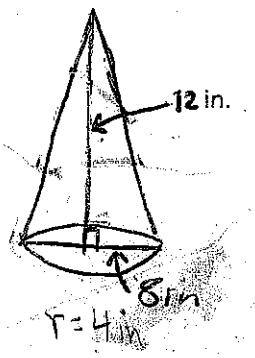
$$\begin{array}{r} 3.14 \\ \times\ 16 \\ \hline 1884 \\ +\ 3140 \\ \hline 50.24 \end{array}$$

50.24

Answer: $50.2\ cm^3$

Find the VOLUME of the solid. Round your answer to the nearest tenth. (4pts each)

4)



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

$$= \frac{3.14 \cdot 4^2 \cdot 12}{3}$$

$$3.14 \cdot 16 \cdot 4$$

$$\begin{array}{r} 3.14 \\ \times\ 64 \\ \hline 1256 \\ +18840 \\ \hline 200.96 \end{array}$$

Answer: $201.0\ in^3$

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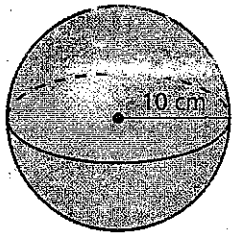
5)



$$V = \frac{4\pi r^3}{3} = \frac{4 \cdot 3.14 \cdot 10^3}{3}$$

$$\begin{array}{r} 4000 \\ \times\ 3.14 \\ \hline 16000 \\ 40000 \\ +1200000 \\ \hline 12560.00 \end{array}$$

$$3\overline{)12560.0} = 4186.6$$

Answer: $4186.7\ cm^3$

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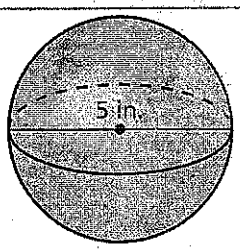
6)



$r = 2.5$

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

$$\begin{array}{r} 15.625 \\ \times\ \ \ 4 \\ \hline 62.500 \end{array}$$

$$\begin{array}{r} 3.14 \\ \times 62.5 \\ \hline 1570 \\ 6280 \\ +188400 \\ \hline 196.250 \end{array}$$

$$\begin{array}{r} 2.5 \\ \times 2.5 \\ \hline 125 \\ +500 \\ \hline 6.25 \\ \times\ 2.5 \\ \hline 3125 \\ +12500 \\ \hline 15.625 \end{array}$$

$$3\overline{)196.25} = 65.41$$

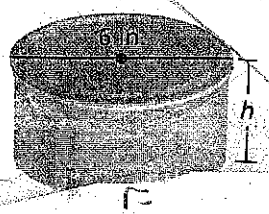
-18, 16, -15, 12, -12, 5

Answer: $65.4\ in^3$

Find the missing dimension of the solid. Round your answer to the nearest tenth. (4pts each)

7)

Volume = 84 in.^{3}



$V = \pi r^2 h$

$84 = 3.14 \cdot 3^2 \cdot h$

$= 3.14 \cdot 9$

$3.14 \times 9 = 28.26$

$2826 \overline{)8480.00}$ → 2.97

-5652

27450

-25434

20160

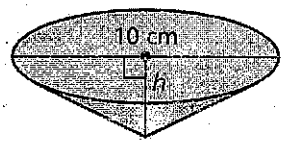
$2526 \times 2 = 5652$

$2826 \times 3 = 8478$

$2826 + 8478 = 25434$

Answer: 3.0in

8) Volume = 78.5 cm^3



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

$78.5 = \frac{3.14 \cdot 5^2 \cdot h}{3}$

$3.14 \times 25 = 1570 + 6280 = 78.50$

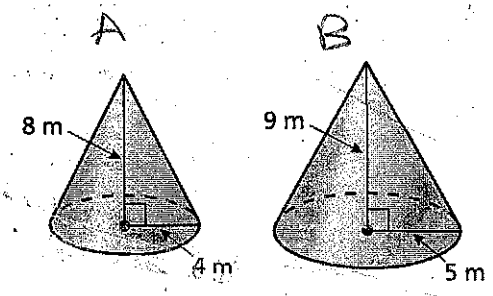
$78.5 = \frac{78.5h}{3}$

$h = 3$

Answer: 3.0cm

Are the solids similar? (4pts each)

9)



$\frac{\text{height A}}{\text{height B}} = \frac{\text{radius A}}{\text{radius B}}$

$\frac{8}{9} \stackrel{?}{=} \frac{4}{5}$

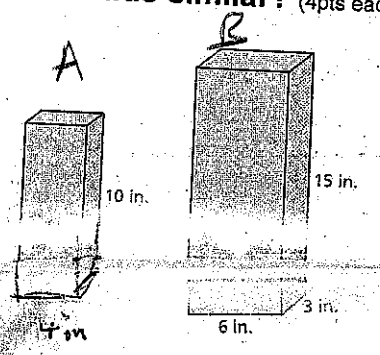
$8 \cdot 5 = 9 \cdot 4$

$40 \neq 36$

Answer: NO

Are the solids similar? (4pts each)

10)



$$\frac{\text{height A}}{\text{height B}} = \frac{\text{Length A}}{\text{Length B}}$$

$$\frac{10}{15} = \frac{4}{6}$$

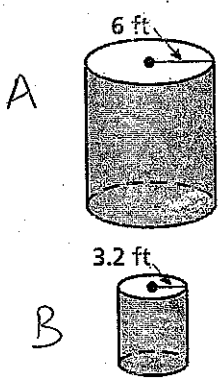
$$60 = 60 \checkmark$$

Answer: YES

These solids ARE similar. Find the Volume or the Surface Area of the ~~larger~~ solid. (4pts each)

11)

Volume = 1500 ft^3



$$\frac{\text{Volume A}}{\text{Volume B}} = \left(\frac{a}{b}\right)^3$$

$$\frac{1500}{V} = \left(\frac{6}{3.2}\right)^3 \rightarrow \left(\frac{1.5}{0.8}\right)^3$$

$$\frac{1500}{V} = \frac{3.375}{0.512}$$

$$\begin{array}{r} 1500 \\ \times\ .512 \\ \hline 3000 \\ 1500\,0 \\ +\ 7500\,00 \\ \hline 768000 \end{array}$$

$$\begin{array}{r} .8 \\ \times .8 \\ \hline .64 \\ \times\ 0.8 \\ \hline 0.512 \end{array}$$

$$\begin{array}{r} 1.5 \\ \times 1.5 \\ \hline 75 \\ +150 \\ \hline 2.25 \\ \times\ 1.5 \\ \hline 1125 \\ +2250 \\ \hline 3.375 \end{array}$$

$$\begin{array}{r} 3375 \\ \times\ 2 \\ \hline 6750 \end{array} \qquad \begin{array}{r} 3375 \\ \times\ 7 \\ \hline 23625 \end{array} \qquad \begin{array}{r} 3375 \\ \times\ 5 \\ \hline 16875 \end{array}$$

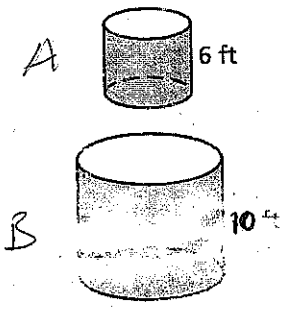
$$3375 \overline{)\,768000.00}$$

$$\begin{array}{r} -6750\downarrow \\ \hline 18500 \\ -16875\downarrow \\ \hline 16250 \\ -13500\downarrow \\ \hline 27500 \\ -23625 \\ \hline 3875 \\ -3375 \\ \hline 500 \end{array}$$

227.55

Volume: 227.6 ft^3

Surface Area = 130 ft^2



$$\frac{\text{Surface Area A}}{\text{Surface Area B}} = \left(\frac{a}{b}\right)^2$$

$$\frac{130}{x} = \left(\frac{6}{10}\right)^2 \rightarrow \left(\frac{3}{5}\right)^2$$

$$\frac{130}{x} = \frac{9}{25}$$

$$\begin{array}{r} 130 \\ \times\ 25 \\ \hline 650 \\ +2600 \\ \hline 3250 \end{array}$$

$$9 \overline{)\,3250.0}$$

$$\begin{array}{r} -27\downarrow \\ \hline 55 \\ -54\downarrow \\ \hline 10 \\ -9 \\ \hline 10 \end{array}$$

361.1

Surface Area: 361.1 ft^2