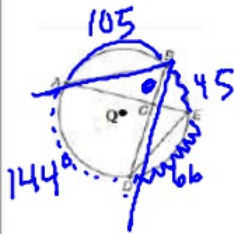


Unit 4B Cumulative Quiz SUPPORT

Name: _____ Date: _____ Period: _____

1



Given that $AB = 105$, $BE = 45^\circ$, $ED = 66^\circ$, find $m\angle ABD$

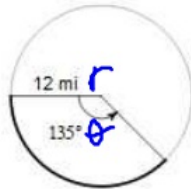
$$\begin{array}{r} 105 \\ 45 \\ \hline 150 \\ 66 \\ \hline 216 \end{array} \quad \begin{array}{r} 360 \\ -216 \\ \hline 144 \end{array}$$

$$\angle = \frac{\text{Arc}}{2} = \frac{144}{2} = \boxed{72^\circ}$$

Add what I know, Subtract from 360° , Divide by 2

2

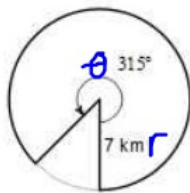
Find the length of the arc. Give the EXACT answer.



$$A.L. = \frac{2\pi r\theta}{360} = \frac{2\pi \cdot 12 \cdot 135}{360} = \boxed{9\pi}$$

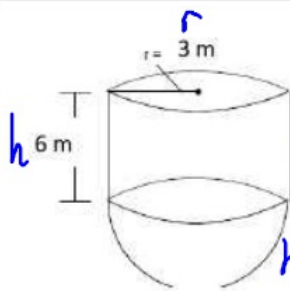
3

Find the area of the sector. Round to the nearest hundredth.



$$A.O.S. = \frac{\pi r^2 \theta}{360} = \frac{\pi \cdot 7^2 \cdot 315}{360}$$

4

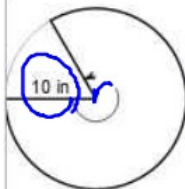


The bottom of the cylindrical container shown has the shape of a hemisphere. The total volume of the container is _____. Leave your answer in terms of π .

cylinder $\pi r^2 h \rightarrow \pi \cdot 3^2 \cdot 6 = \boxed{54\pi}$ $= \boxed{72\pi}$

hemisphere $\frac{4\pi r^3}{3} \div 2 \quad \frac{4\pi \cdot 3^3}{3} = 36\pi \div 2 = \boxed{18\pi}$

5



Given the area of the sector is 261.8 yds^2 , find the measure of the central angle θ . Round to the nearest whole #.

$$A.O.S. = \frac{\pi r^2 \theta}{360} \quad 261.8 = \frac{\pi \cdot 10^2 \cdot \theta}{360}$$

$$\boxed{300 = \theta}$$

$$\frac{94248}{(\pi \cdot 10^2)} = \frac{\pi \cdot 10^2 \cdot \theta}{\pi \cdot 10^2}$$

6



The figure below is a scale drawing of two cylinders, A and B. Cylinder A has a radius of 6 in and a height of 4 in. Cylinder B has a radius of 3 in and a height of 10 in. Are the volumes of these cylinders equal? If not, which one has the greater volume? SHOW ALL WORK

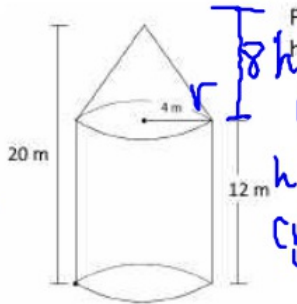
$$V = \pi r^2 h$$

$$V_A = \pi 6^2 \cdot 4 = 144\pi$$

A has a greater volume.

$$V_B = \pi 3^2 \cdot 10 = 90\pi$$

7



Find the volume of the composite figure. Round your answer to the nearest hundredth.

$$\text{Cone} = \frac{\pi r^2 h}{3} = \frac{\pi 4^2 \cdot 8}{3} = 134.04$$

$$\text{Cylinder} = \pi r^2 h = \pi 4^2 \cdot 12 = 603.19$$

$$\begin{array}{r} 603.19 \\ 134.04 \\ \hline \end{array}$$

$$737.23$$

8

Given the volume of a cone is 201.06 in³ and the height is 12 in, find the radius of the cone.

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

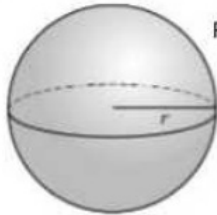
$$3 \cdot 201.06 = \frac{\pi r^2 \cdot 12}{3}$$

$$\frac{603.18}{\pi 12} = \frac{\pi r^2 \cdot 12}{\pi 12}$$

$$\sqrt{16} = \sqrt{r^2}$$

$$4 = r$$

9



Find the volume of a sphere that has a radius of 18 ft. Leave your answer in terms of π .

$$V = \frac{4\pi 18^3}{3} = 7776\pi$$

10



There are two stacks of pennies, one of which has been moved slightly. Use Cavalieri's Theorem to determine if the volumes of these two stacks are the same, or different? EXPLAIN.

The cross sectional area at equal heights are the same so the volume of the two figures are also the same.