

Part One: Provide the following formulas.

1. Prism  
LA= Ph

TA= L + 2B

V= Bh

2. Pyramid  
LA=  $\frac{1}{2}Pl$

TA= L + B

V=  $\frac{1}{3}Bh$

3. Cylinder  
LA=  $2\pi rh$

TA=  $L + 2\pi r^2$

V=  $\pi r^2 h$

4. Cone  
LA=  $\pi rl$

TA=  $L + \pi r^2$

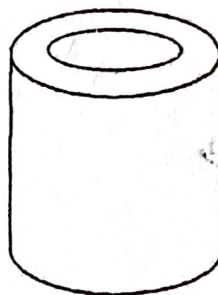
V=  $\frac{1}{3}\pi r^2 h$

Part Two: SHOW ALL WORK! ROUND ALL ANSWERS TO THE NEAREST HUNDREDTH!

1. If each side of a base of a hexagonal right prism is 8 cm, and the altitude is 10 cm, find the total area and volume of the solid.

Total Area  $812.54 \text{ cm}^2$  Volume  $1662.72 \text{ cm}^3$

3. A pipe is 45 cm long and has an inside radius of 5 cm and an outside radius of 7 cm. How many cubic centimeters of metal are in the pipe?



$3392.92 \text{ cm}^3$   
( $1080\pi$ )

2. The altitude of a regular pyramid with a square base is 16 inches and its slant height is  $\sqrt{305}$  inches. What is the volume?

Volume  $1045.33 \text{ in}^3$

4. A right cone has a slant height of 13mm and a height of 12mm. Find the lateral area and total area of the cone.

Lateral Area  $204.20 \text{ mm}^2$  ( $65\pi$ )

Total Area  $282.74 \text{ mm}^2$  ( $90\pi$ )

Part Three: Provide the following formulas.

1. Sphere

$$TA = 4\pi r^2$$

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

~~2. Ratios (a : b)~~

~~corresponding perimeters \_\_\_\_\_~~

~~corresponding areas \_\_\_\_\_~~

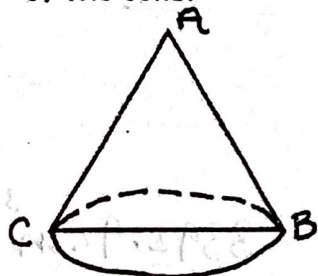
~~corresponding volumes \_\_\_\_\_~~

Part Four: SHOW ALL WORK! ROUND ALL ANSWERS TO THE NEAREST HUNDREDTH!

1. The height of a right circular cylinder is twice the radius of the base, and the volume of the cylinder is 180 cubic inches. Find the height of the cylinder.

Height 6.12 in.

2. The figure shown is a right circular cone. If  $AB = 10$  cm and  $m\angle ABC = 36$ , find the total area of the cone.



Total Area 459.78 cm<sup>2</sup>

3. If the length of the diameter of a sphere is 14 mm, find the volume of the sphere.

Volume 1436.76 mm<sup>3</sup>  

$$\left(\frac{1372\pi}{3}\right)$$

4. If the volume of a sphere is  $36\pi$  cubic inches, find its total area.

Total Area 113.10 in<sup>2</sup>  

$$(36\pi)$$

5. A sphere of radius  $r$  is inscribed in a cube of edge length  $e$ . If one edge of the cube is 8 cm, find the volume of the region between the sphere and the cube.

Volume 243.92 cm<sup>3</sup>