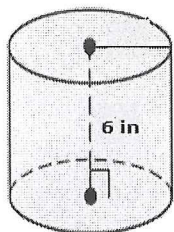


Name: \_\_\_\_\_

*Students Solutions - must have all work.*

HW: Working Backwards: Surface Area & Volume of Cylinders, Cones, and Spheres

1. Find the radius of the cylinder below if the volume is  $150\pi$  in<sup>3</sup>



$$r = 5 \text{ in}$$

2. Find the diameter of a cylinder whose volume is  $75\pi$  cm<sup>3</sup> and its height is 5 cm.

$$d = 2\sqrt{15} \text{ cm}$$

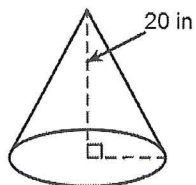
3. Find the diameter of a sphere if the SA =  $576\pi$  mm<sup>2</sup>.

$$d = 24 \text{ mm}$$

4. Find the radius of a sphere if the  $V = 288\pi$  m<sup>3</sup>.

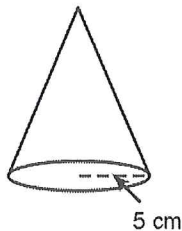
$$r = 6 \text{ m}$$

5. Use the cone below to find the radius if the volume is  $540\pi$  in<sup>3</sup>.



$$r = 9 \text{ in}$$

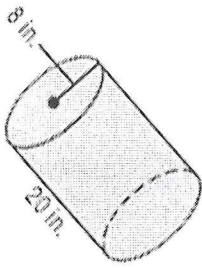
6. Find the slant height of the cone below if the surface area is  $90\pi$  cm<sup>2</sup>.



$$l = 13 \text{ cm}$$

**Directions:** Identify each figure, find the surface area and volume of the following figures. You must write the formula you used first. Keep all answers in terms of pi, then show the rounded value to the nearest thousandth.

7.

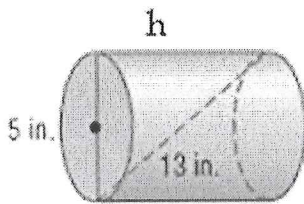


Identify: \_\_\_\_\_

Surface Area:  $448\pi \text{ in}^2$

Volume:  $1200\pi \text{ in}^3$

8.

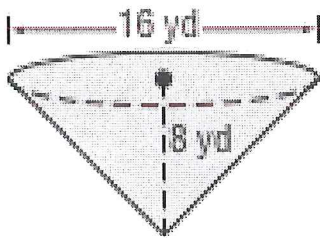


Identify: \_\_\_\_\_

Surface Area:  $72.5\pi \text{ in}^2$

Volume:  $75\pi \text{ in}^3$

9.

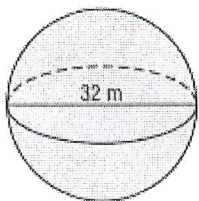


Identify: \_\_\_\_\_

Surface Area:  $64\pi + 64\pi\sqrt{2} \text{ yd}^2$

Volume:  $170.6\pi \text{ yd}^3$

10.



Identify: \_\_\_\_\_

Surface Area:  $1024\pi \text{ m}^2$

Volume:  $5461.3\pi \text{ m}^3$