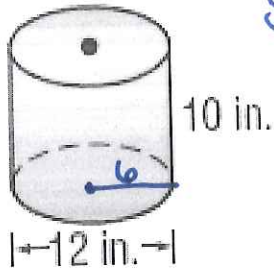


Name: \_\_\_\_\_ Hour: \_\_\_\_\_

## Basic Surface Area and Volume of Cylinders Homework

Directions: Find the volume and surface area of the solid, round to the nearest tenth if needed.

1.



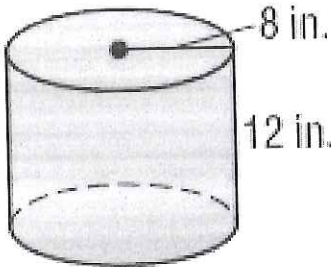
$$\begin{aligned} SA &= 2\pi r^2 + 2\pi rh \\ &= 2\pi 6^2 + 2\pi 6 \cdot 10 \end{aligned}$$

$$SA = \underline{603.2 \text{ in}^2}$$

$$\begin{aligned} V &= \pi r^2 h \\ &= \pi 6^2 \cdot 10 \end{aligned}$$

$$V = \underline{1131.0 \text{ in}^3}$$

2.



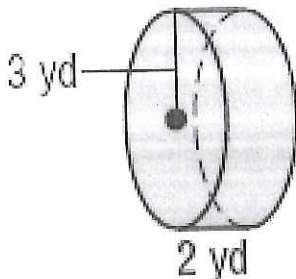
$$\begin{aligned} SA &= 2\pi r^2 + 2\pi rh \\ &= 2\pi 8^2 + 2\pi 8 \cdot 12 \end{aligned}$$

$$SA = \underline{1005.3 \text{ in}^2}$$

$$\begin{aligned} V &= \pi r^2 h \\ &= \pi 8^2 \cdot 12 \end{aligned}$$

$$V = \underline{2412.7 \text{ in}^3}$$

3.



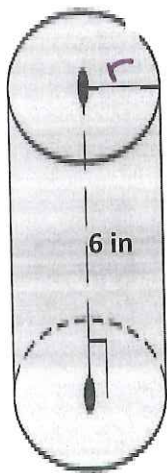
$$\begin{aligned} SA &= 2\pi r^2 + 2\pi rh \\ &= 2\pi 3^2 + 2\pi 3 \cdot 2 \end{aligned}$$

$$SA = \underline{94.2 \text{ yd}^2}$$

$$\begin{aligned} V &= \pi r^2 h \\ &= \pi 3^2 (2) \end{aligned}$$

$$V = \underline{56.5 \text{ yd}^3}$$

4. Find the radius of the cylinder below if the volume is  $75.4 \text{ in}^3$



$$V = \pi r^2 h$$
$$\frac{75.4}{(6\pi)} = \frac{\pi r^2 \cdot 6}{6\pi}$$

$$4 = r^2$$

$$\boxed{r = 2 \text{ in.}}$$

5. Find the **diameter** of a cylinder whose volume is  $75\pi \text{ cm}^3$  and its height is 5 cm.

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

$$\frac{75\pi}{5\pi} = \frac{\pi r^2 \cdot 5}{5\pi}$$

$$15 = r^2$$

$$3.9 = r$$

$$\boxed{d = 7.8 \text{ cm}}$$

6. Find the height of a cylinder whose volume is  $785.4 \text{ in}^3$  and its radius is 5 inches.

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

$$785.4 = \pi 5^2 h$$

$$785.4 = 25\pi h$$

$$\boxed{10 \text{ in.} = h}$$