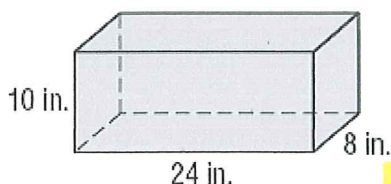


Basic Surface Area and Volume of Prisms and Cylinders-

Homework

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

1.



$$SA = 2(10 \times 24) = 480$$

$$2(8 \times 10) = 160$$

$$2(24 \times 8) = 384$$

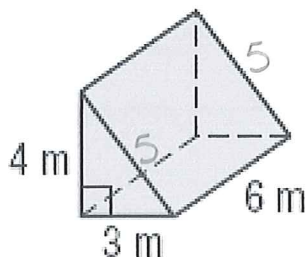
$$SA = 1024 \text{ in}^2$$

$$V = B \cdot h$$

$$(10 \times 8)(24)$$

$$V = 1920 \text{ in}^3$$

2.



$$SA = 2\left(\frac{1}{2}(3)(4)\right) = 12$$

$$1(6 \times 5) = 30$$

$$1(6 \times 3) = 18$$

$$+ 1(4 \times 6) = 24$$

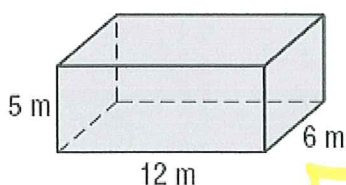
$$SA = 84 \text{ m}^2$$

$$V = B \cdot h$$

$$= \left[\frac{1}{2}(4)(3)\right](6)$$

$$V = 36 \text{ m}^3$$

3.



$$SA = 2(12 \times 5) = 120$$

$$2(6 \times 5) = 60$$

$$+ 2(12 \times 6) = 144$$

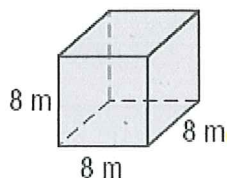
$$SA = 324 \text{ m}^2$$

$$V = B \cdot h$$

$$= (5 \times 6)(12)$$

$$V = 360 \text{ m}^3$$

4.



$$SA = 6(8 \times 8)$$

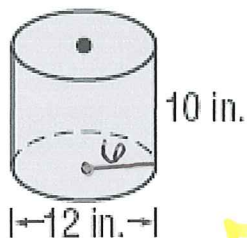
$$SA = 384 \text{ m}^2$$

$$V = B \cdot h$$

$$= (8)(8)(8)$$

$$V = 512 \text{ m}^3$$

5.



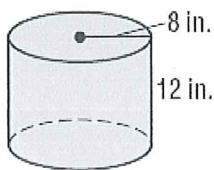
$$\begin{aligned}
 SA &= 2\pi r^2 + 2\pi r h \\
 &= 2\pi(6)^2 + 2\pi(6)(10) \\
 &= 72\pi + 120\pi \\
 &= 192\pi
 \end{aligned}$$

$$SA \approx 603.2 \text{ in}^2$$

$$\begin{aligned}
 V &= B \cdot h \\
 &= \pi r^2 \cdot h \\
 &= \pi(6)^2(10) \\
 &= 360\pi
 \end{aligned}$$

$$V \approx 1131.0 \text{ in}^3$$

6.



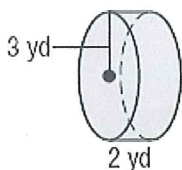
$$\begin{aligned}
 SA &= 2\pi r^2 + 2\pi r h \\
 &= 2\pi(8)^2 + 2\pi(8)(12) \\
 &= 128\pi + 192\pi \\
 &= 320\pi
 \end{aligned}$$

$$SA \approx 1005.3 \text{ in}^2$$

$$\begin{aligned}
 V &= B \cdot h \\
 &= \pi r^2 \cdot h \\
 &= \pi(8)^2(12) \\
 &= 768\pi
 \end{aligned}$$

$$V \approx 2412.7 \text{ in}^3$$

7.



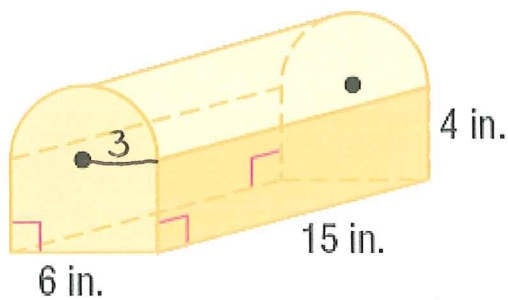
$$\begin{aligned}
 SA &= 2\pi r^2 + 2\pi r h \\
 &= 2\pi(3)^2 + 2\pi(3)(2) \\
 &= 18\pi + 12\pi \\
 &= 30\pi
 \end{aligned}$$

$$SA \approx 94.2 \text{ yd}^2$$

$$\begin{aligned}
 V &= B \cdot h \\
 &= \pi r^2 \cdot h \\
 &= \pi(3)^2(2) \\
 &= 18\pi
 \end{aligned}$$

$$V \approx 56.5 \text{ yd}^3$$

8.



$$\begin{aligned}
 SA &= \frac{1}{2}(2\pi r^2 + 2\pi r h) + 2(6 \times 4) \\
 &\quad + 2(15 \times 4) + (6 \times 15) \\
 &= \frac{1}{2}(2\pi(3)^2 + 2\pi(3)(15)) + 48 + 120 + 90
 \end{aligned}$$

$$SA \approx 337.6 \text{ in}^2$$

$$\begin{aligned}
 V &= \frac{1}{2} \text{ cylinder} + \text{prism} \\
 V &= \frac{1}{2} \pi(3)^2(15) + 6 \cdot 4 \cdot 15
 \end{aligned}$$

$$V \approx 572.1 \text{ in}^3$$