

3.3 Surface Area

Name: ky

Area: the number of square units needed to cover a region

Surface Area: the total area of the surface of an object

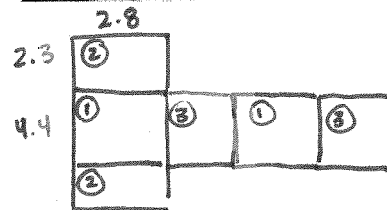
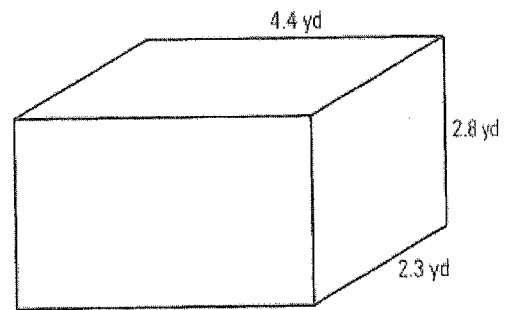
- A right rectangular prism has 3 pairs of identical rectangles.
- A cylinder has 3 faces (1 rectangular face and 2 circular bases). The two circles are identical.
- When calculating surface area be sure to remember that your solution will be in units Squared. For example mm², cm², in², yd².

Examples:

1. Find the surface area of this right rectangular prism.

$$\begin{aligned} \textcircled{1} A &= lw \\ &= 4.4 \times 2.8 \\ &= 12.32 \text{ yd}^2 \end{aligned} \quad \begin{aligned} \textcircled{2} A &= lw \\ &= 2.3 \times 2.8 \\ &= 6.44 \text{ yd}^2 \end{aligned} \quad \begin{aligned} \textcircled{3} A &= lw \\ &= 4.4 \times 2.3 \\ &= 10.12 \text{ yd}^2 \end{aligned}$$

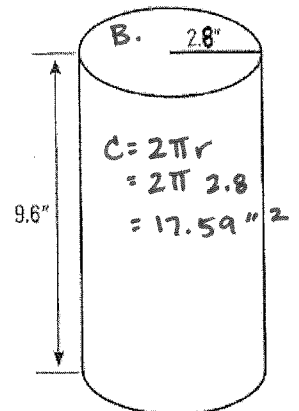
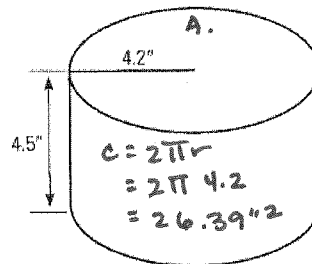
$$\begin{aligned} SA &= 2(lw) + 2(lw) + 2(lw) \\ &= 2(12.32) + 2(6.44) + 2(10.12) \\ &= 24.64 + 12.88 + 20.24 \\ &= 57.76 \text{ yd}^2 \end{aligned}$$



2. A canning factory wants to use as little metal as possible to make its cans. It considers two can sizes that each hold about the same amount. Which one should they use?

$$\begin{aligned} A. A_0 &= \pi r^2 \\ &= \pi (4.2)^2 \\ &= 55.42 \text{ in}^2 \\ A_{\square} &= lw \\ &= 4.5 \times 26.39 \\ &= 118.76 \text{ in}^2 \end{aligned}$$

$$\begin{aligned} B. A_0 &= \pi r^2 \\ &= \pi (2.8)^2 \\ &= 24.63 \\ A_{\square} &= lw \\ &= 9.6 \times 17.59 \\ &= 168.86 \text{ in}^2 \end{aligned}$$



$$\begin{aligned} SA &= 2(A_0) + A_{\square} \\ &= 2(55.42) + 118.76 \\ &= 229.6 \text{ in}^2 \end{aligned}$$

$$\begin{aligned} SA &= 2(24.63) + 168.86 \\ &= 218.12 \text{ in}^2 \end{aligned}$$

Better to use can B
bc it uses less material.

