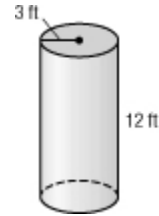


Lesson 12-5

Example 1 Find the Surface Area of a Cylinder

Find the surface area of the cylinder. Round to the nearest tenth.



$$\begin{aligned} S &= 2\pi r^2 + 2\pi rh && \text{Surface area of a cylinder} \\ &= 2\pi(3)^2 + 2\pi(3)(12) && \text{Replace } r \text{ with 3 and } h \text{ with 12.} \\ &\approx 282.7 && \text{Simplify.} \end{aligned}$$

The surface area is about 282.7 square feet.

Example 2 Use Surface Area to Solve a Problem

PAINT A can of paint is 9 inches high, and its base has a diameter of 6 inches. How much paper is needed to make the label on the can?

Since only the curved side of the can has a label, you do not need to include the areas of the top and bottom of the can.

$$\begin{aligned} S &= 2\pi rh && \text{Curved surface of a cylinder} \\ &= 2\pi(3)(9) && \text{Replace } r \text{ with 3 and } h \text{ with 9.} \\ &\approx 169.6 && \text{Simplify.} \end{aligned}$$

So, about 169.6 square inches of paper is needed to make the label.