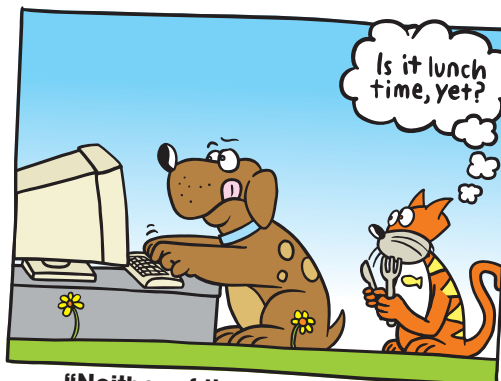# 6 Surface Areas of Solids

"I want to paint my dog house. To make sure I buy the correct amount of paint, I want to calculate the lateral surface area."

"Then, because I want to paint the inside and the outside, I will multiply by 2. Does this seem right to you?"

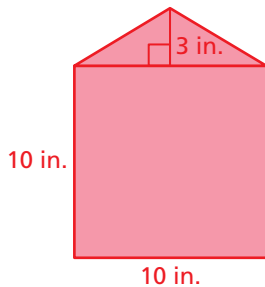"Dear Sir: Why do you sell dog food in tall cans and sell cat food in short cans?"

"Neither of these shapes is the optimal use of surface area when compared to volume."

What You Learned Before

● Finding the Area of a Composite Figure
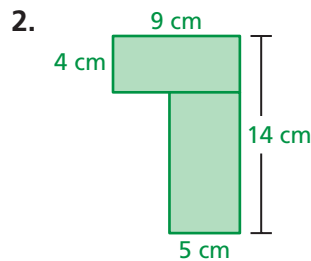
Example 1 Find the area.

3 in.

10 in.

10 in.

Area = Area of square + Area of triangle

$$A = s^2 + \frac{1}{2}bh$$

$$= 10^2 + \left(\frac{1}{2} \cdot 10 \cdot 3\right)$$

$$= 100 + 15$$

$$= 115 \text{ in.}^2$$

Try It Yourself

Find the area.

1.

8 m

15 m

2.

9 cm

4 cm

14 cm

5 cm

● Finding the Area of Circles

Example 2 Find the area.

7 mm
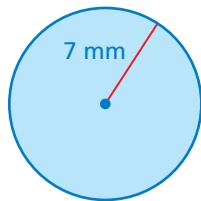
$$A = \pi r^2$$

$$\approx 3.14(7)^2$$

$$= 3.14 \cdot 49$$

$$= 153.86 \text{ mm}^2$$

Example 3 Find the area.
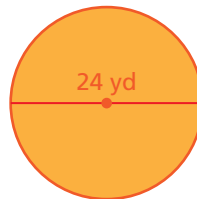
24 yd

$$A = \pi r^2$$

$$\approx 3.14(12)^2$$

$$= 3.14 \cdot 144$$

$$= 452.16 \text{ yd}^2$$

Try It Yourself

Find the area.

3.

5 ft

4.

26 in.

5.

7 cm