5 Similarity and Transformations

"Just 2 more minutes. I'm almost done with my 'cat tessellation' painting."

"If you hold perfectly still..."

"...each frame becomes a horizontal..."

"...translation of the previous frame..."

What You Learned Before

"These clouds are making me hungry."

(speech bubble) Why can't we get some clouds that are similar to mice?
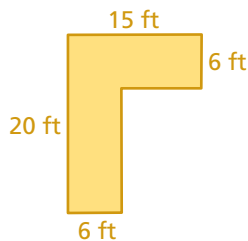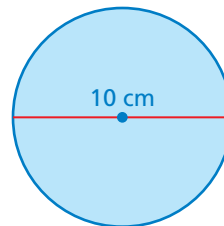
● Finding Perimeter

Example 1 Find the perimeter.

$$P = 15 + 6 + 9 + 14 + 6 + 20$$
$$= 70 \text{ ft}$$

Example 2 Find the circumference.
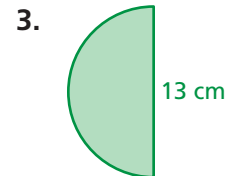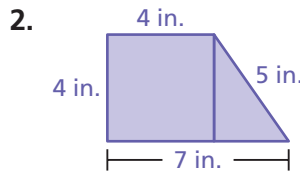

$$C = 2\pi r$$
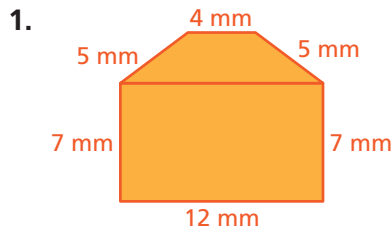$$= 2 \cdot 3.14 \cdot 5 \quad \longleftarrow \quad r = \frac{d}{2} = \frac{10}{2} = 5$$
$$= 31.4 \text{ cm}$$

Try It Yourself

Find the perimeter.

1.

2.

3.

● Solving Proportions

Example 3 Solve the proportion.

a. $\dfrac{x}{32} = \dfrac{3}{4}$

$$\dfrac{x}{32} = \dfrac{3}{4} \qquad \text{Write the proportion.}$$
$$4x = 96 \qquad \text{Use the Cross Products Property.}$$
$$x = 24 \qquad \text{Solve for } x.$$

b. $\dfrac{3x}{20} = \dfrac{3}{5}$

$$\dfrac{3x}{20} = \dfrac{3}{5}$$
$$15x = 60$$
$$x = 4$$

Try It Yourself

Solve the proportion.

4. $\dfrac{2}{7} = \dfrac{x}{21}$

5. $\dfrac{3}{4} = \dfrac{3y}{8}$

6. $\dfrac{3}{14} = \dfrac{9}{y}$

7. $\dfrac{8}{9x} = \dfrac{2}{9}$