1.7 Introduction to Perimeter, Circumference, and Area

Goals
- Find the perimeter and area of common plane figures.
- Use a general problem-solving plan.

PERIMETER, CIRCUMFERENCE, AND AREA FORMULAS

Formulas for the perimeter P, area A, and circumference C of some common plane figures are given below.

Square
side length s

$P =$ $4s$
$A =$ s^2

Rectangle
length ℓ and width w

$P =$ $2\ell + 2w$
$A =$ ℓw

Triangle
side lengths a, b, and c, base b, and height h

$P =$ $a + b + c$
$A =$ $\frac{1}{2}bh$

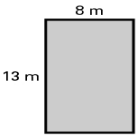
Circle
radius r

$C =$ $2\pi r$
$A =$ πr^2

Pi (π) is the ratio of the circle's circumference to its diameter.

Example 1 *Finding the Perimeter and Area of a Rectangle*

Find the perimeter and area of the rectangle.



Use the formulas for the perimeter and area of a rectangle.

$P = 2\ell + 2w$
$= 2 \cdot$ 13 $+ 2 \cdot$ 8
$=$ 26 $+$ 16
$=$ 42

$A = \ell w$
$=$ 13 $\cdot$ 8
$=$ 104

Answer The perimeter is 42 meters and the area is 104 square meters.