Lesson 3-6

Example 1 Find the Perimeter of a Rectangle
Find the perimeter of the rectangle shown below.

$P = 2\ell + 2w$ Perimeter of a rectangle
$P = 2(21) + 2(13)$ Replace ℓ with 21 and w with 13.
$P = 42 + 26$ Multiply.
$P = 68$ Add.

The perimeter is 68 inches.

Example 2 Solve a Problem Involving Perimeter
QUILTING Anna is making a rectangular quilt. She wants the length of the quilt to be 6 feet. She wants to put a decorative edging around the quilt. If she has 20 feet of the decorative edging, what is the greatest width the quilt can be?

$P = 2l + 2w$ Perimeter of a rectangle
$20 = 2(6) + 2w$ Replace P with 20 and l with 6.
$20 = 12 + 2w$ Multiply
$20 - 12 = 12 + 2w - 12$ Subtract 12 from each side.
$8 = 2w$ Simplify.
$4 = w$ Divide each side by 2.

The greatest width the quilt can be is 4 feet wide.

Example 3 Find the Area of a Rectangle
CLASSROOM   Find the area of the classroom shown below.

32 ft

25 ft
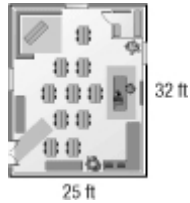
$A = \ell \cdot w$ Area of a rectangle
$A = 32 \cdot 25$ Replace ℓ with 32 and w with 25.
$A = 800$ Multiply.

The area of the classroom is 800 square feet.

Example 4 Use Area to Find a Missing Side
The area of a rectangle is 68.82 square centimeters. If the width is 7.4 centimeters, find the length.

$A = lw$ Write the equation.
$68.82 = l(7.4)$ Replace A with 68.82 and w with 7.4.
$$\frac{68.82}{7.4} = \frac{l(7.4)}{7.4}$$ Divide each side by 7.4
$9.3 = l$ Simplify.

So, the length of the rectangle is 9.3 centimeters.