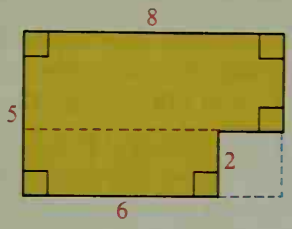
Areas are always measured in square units. Some common units of area are the square centimeter (cm^2) and the square meter (m^2). In part (b) of the example below, notice that the unit of length and the unit of area are understood to be "units" and "square units," respectively. It is important to remember that the implied units for length and area are different.

Example Find the area of each figure.

a. A rectangle with base 3.5 cm and height 2 cm

b.



Solution

a. $A = 3.5(2) = 7\ (cm^2)$

b. *Method 1* (see blue lines) $A = (8 \cdot 5) - (2 \cdot 2) = 40 - 4 = 36$

Method 2 (see red line) $A = (8 \cdot 3) + (6 \cdot 2) = 24 + 12 = 36$

Classroom Exercises

1. Tell what each letter represents in the formula $A = s^2$.
2. Tell what each letter represents in the formula $A = bh$.
3. Find the area and perimeter of a square with sides 5 cm long.
4. The perimeter of a square is 28 cm. What is the area?
5. The area of a square is 64 cm^2. What is the perimeter?

Exercises 6–13 refer to rectangles. Complete the table.

	6.	7.	8.	9.	10.	11.	12.	13.
b	8 cm	4 cm	12 m	?	$3\sqrt{2}$	$4\sqrt{2}$	$5\sqrt{3}$	$x + 3$
h	3 cm	1.2 cm	?	5 cm	2	$\sqrt{2}$	$2\sqrt{3}$	x
A	?	?	36 m^2	55 cm^2	?	?	?	?

14. a. What is the converse of the Area Congruence Postulate?

b. Is this converse true or false? Explain.

15. a. Draw three noncongruent rectangles, each with perimeter 20 cm. Find the area of each rectangle.

b. Of all rectangles having perimeter 20 cm, which one do you think has the greatest area? (Give its length and width.)