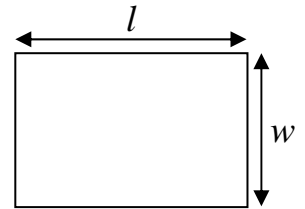Name: _____
Date: _____

Worksheet 3-2: Algebraic Modelling of Areas

The area of any **rectangle** can be found using the formula:
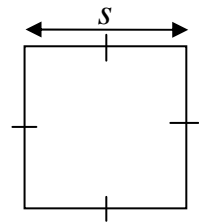
$$A = lw$$

where A is the area of the rectangle,

          l is the length of the rectangle, and

          w is the width of the rectangle.

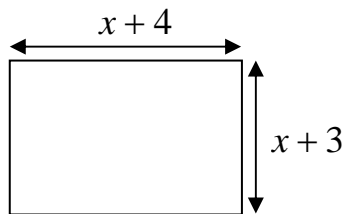The area of any **square** can be found using the formula:

$$A = s^2$$

where A is the area of the square, and

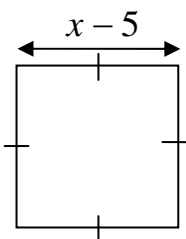 s is the side length of the square,

1. Write a simplified algebraic expression to represent the area of each figure.
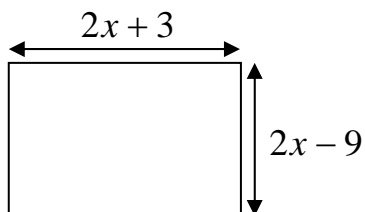
(a)

$x + 4$

$x + 3$

(b)

$x - 5$

(c)

$2x + 3$

$2x - 9$

Assigned Work: WS 3-1; WS 3-2; Text p. 239: #5-11

2. There is a rectangular parking lot near George Harvey C. I. If $x + 7$ represents the length of the parking lot and $x - 2$ represents the width of the parking lot, write a simplified algebraic expression for the area of the parking lot.

3. A garden has a shape of a square. If $2x + 3$ represents the side length of the garden, write a simplified algebraic expression for the area of the garden.

4. A room is rectangular in shape. The length of the room can be represented as $3x - 2$, and the width of the room can be represented as $2x + 5$. Write a simplified algebraic expression to represent the area of the room.

5. Ms. Chor saw a table in a store as shown on the right. She wants to make the table on her own and cut out a piece of wood as the table top. If the side length of the table top can be represented as $3x - 7$, write a simplified algebraic expression for the area of table top.

Answers: 1. (a) $x^2 + 7x + 12$, (b) $x^2 - 10x + 25$, (c) $4x^2 - 12x - 27$; **2.** $x^2 + 5x - 14$; **3.** $4x^2 + 12x + 9$;
       4. $6x^2 + 11x - 10$; **5.** $9x^2 - 42x + 49$