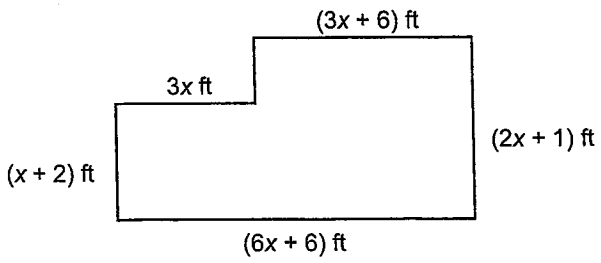
Example 3: **The figure below is made up of two rectangles. What is the total area, in square feet, of the figure?**



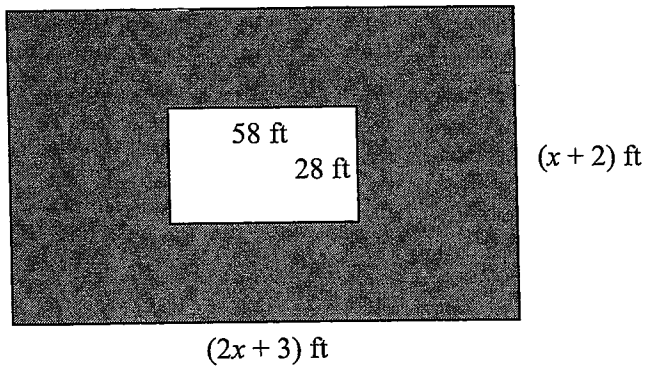
At first, this problem may look like you need to subtract the areas. But look carefully at the dimensions given. Based on the given lengths, it is easier to break the figure into two rectangles and add. The side given as $(6x + 6)$ feet is extra information that you do not need to solve the problem.

Step 1:	The geometric relationship is the area of a rectangle.	$A = \ell w$
Step 2:	In this problem, you have the dimensions of two rectangles that can be *added* to give the total area.	**Rect. 1 + Rect. 2**
Step 3:	Substitute the values from the diagram into your equation.	$3x(x + 2) + (3x + 6)(2x + 1)$
Step 4:	For the first rectangle, multiply the monomial and the binomial. For the second rectangle, multiply the two binomials. Simplify by combining like terms.	$3x^2 + 6x + 6x^2 + 3x + 12x + 6$ $9x^2 + 21x + 6$

Practice

Answer the following area word problems. Write the final expression in the blank.

1. A rectangular shaped house sits on a rectangular lot. The house is 58 feet by 28 feet, and the lot is $(x + 2)$ feet in width by $(2x + 3)$ feet in length. If the lot is covered with grass, write a polynomial that shows how many square feet of grass there is to cut.



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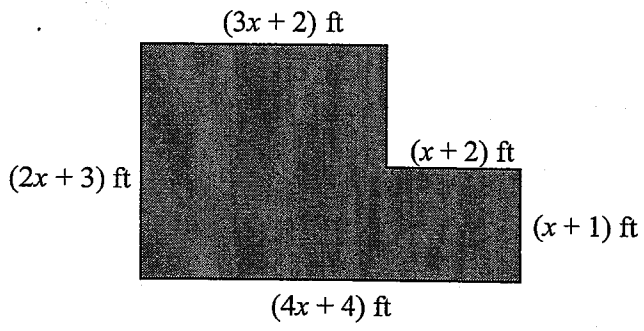
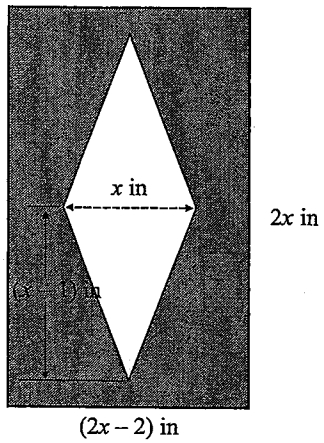
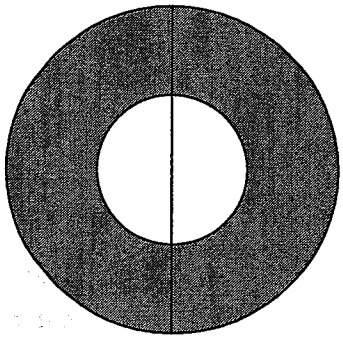
2. An irregularly shaped lot is made up of two rectangular sections. Given the dimensions below, write a polynomial that shows how many square feet make up the lot.



3. A crafts person makes a tissue box cover out of wood. The top of the cover is a rectangle with a diamond shape cut out. (Think of the diamond as two triangles, base to base.) The length of the rectangular box is $2x$ inches, and the width is $(2x - 2)$ inches. The base of each triangle making up the diamond cut-out is x inches, and the height of each triangle is $(x - 1)$ inches. Write an expression that represents the area of the wood minus the diamond cut-out.



4. The jump circle in the middle of a basketball court is a circle within a circle. The inner circle has a diameter of $2x$ feet. The outside circle has a diameter of $6x$ feet. Sometimes the outer circle is painted, but the inner one is not. Write an expression that could be used to calculate the square feet of paint used in the shaded portion.



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