9.2: Multiplying Polynomials

Goals: * Multiply a monomial and a polynomial using distributive property
    * Multiply Binomials by using the FOIL method
    * Multiply polynomials

Multiply a monomial and a polynomial:

Ex: $x(7x^2 + 4)$

Ex: $(2x^3)(x^3 + 3x^2 - x + 5)$

Ex: $3x^2(2x^3 - x^2 + 4x + 3)$

Multiply binomials:

Ex: $(x - 3)(3x + 2)$

Ex: $(a + 3)(2a + 1)$

Ex: $(4n - 1)(n + 5)$

Ex: $(x + 4)(2x - 1)$

Multiplying Polynomials:

Ex: $(b^2 + 6b - 7)(3b - 4)$

Ex: $(2x^2 + 5x - 1)(4x - 3)$

**Ex:** $(x^2 + 2x + 1)(x + 2)$

Ex: $(3y^2 - y + 5)(2y - 3)$

Ex: $(a^2 + 3a - 4)(2a + 3)$

Ex: $(2x^2 - x - 2)(3x - 1)$

Ex: The dimensions of a rectangle are $x + 3$ and $x + 2$. Write a simplified expression to represent the area of the rectangle.

Ex: You are designing a rectangular skateboard park on a lot that is on the corner of a city block. The park will have a walkway along two sides that is x feet wide.
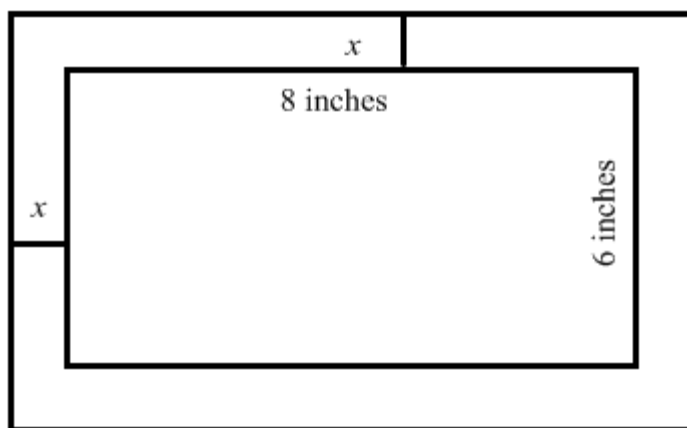
· Write a polynomial that represents the area of the skate park.

x

Walkway

Walkway

33 feet

x

45 feet
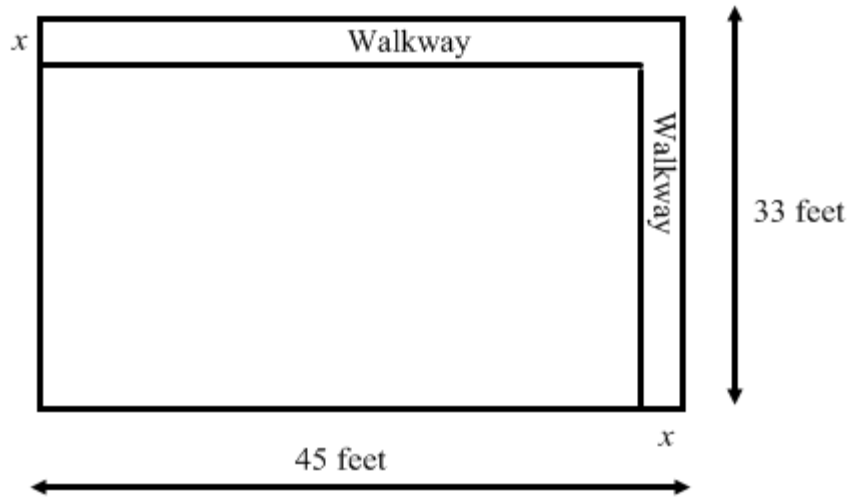
· What is the area if walkway is 3 feet wide?

Ex: A rectangular trivet has a ceramic center and wooden border.
· Write a polynomial that represents the total area.

x

8 inches

x

6 inches

· What is the area if the width of the border is 2 inches?