


Functions and Applications

Chapter 2: The Algebra of Quadratic Expressions

2.1 Working with Quadratic Expressions



Functions and Applications

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2.1 Working with Quadratic Expressions

- For the product of a monomial and a binomial, the distributive property states that

$$a(b + c) = ab + ac$$

- For the product of a binomial and a binomial, apply the distributive property twice:

$$\begin{aligned} (a + b)(c + d) &= a(c + d) + b(c + d) \\ &= ac + ad + bc + bd \end{aligned}$$



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Remember from previous math classes:

Distribution:

$$a(b + c) = ab + ac$$

Example: $2(x + 3) = 2(x) + 2(3)$
 $= 2x + 6$



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Remember from previous math classes:

FOIL: (First, Outside, Inside, Last)

$$(a + b)(c + d) = ac + ad + bc + bd$$

Example: $(x + 2)(x + 3) = x(x) + x(3) + 2(x) + 2(3)$
 $= x^2 + 3x + 2x + 6$
 $= x^2 + 5x + 6$

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Example:

Simplify $(3x + 1)^2$

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Example:

Is the following statement true?

$$(2x + 3)(2x - 3) = 4x^2 - 9$$

Check with $x = -1, 0, 1$

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Expand and simplify.

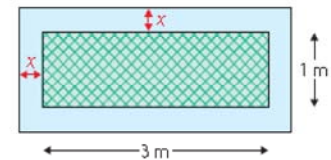
- a) $x(2x + 1)$ c) $-2(a - 5)(3a - 2)$
b) $5(2x - 3)^2$ d) $4n(n - 3) + (5n + 1)(3n + 2)$

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Evelyn is sewing a quilt as shown. If the width of the border is x , state the area of the quilt as a function of x .





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Homework:

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