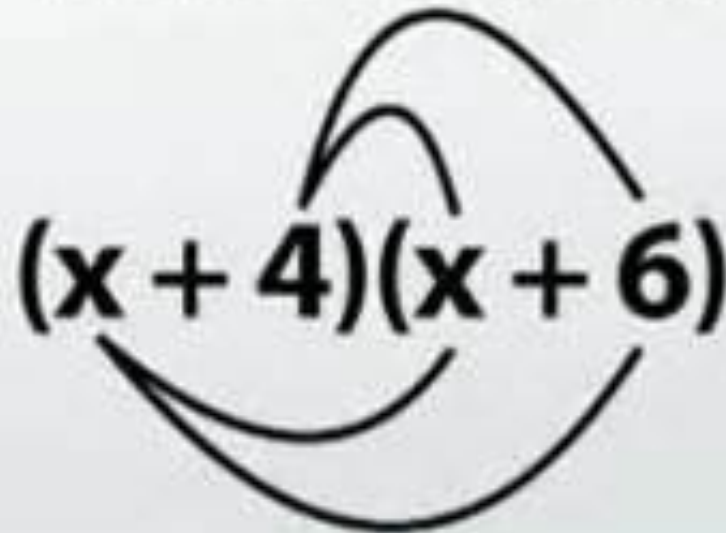


Lesson 1.2.2: Multiplying Polynomials

The Claw



The diagram illustrates the FOIL method for multiplying the binomials $(x + 4)(x + 6)$. The expression is written in bold black text. Two curved arrows are drawn above the expression: one connects the first x in the first binomial to the first x in the second binomial, and another connects the first x to the 6 . Two curved arrows are drawn below the expression: one connects the 4 to the first x , and another connects the 4 to the 6 . These arrows represent the 'First', 'Outer', 'Inner', and 'Last' terms of the FOIL method.

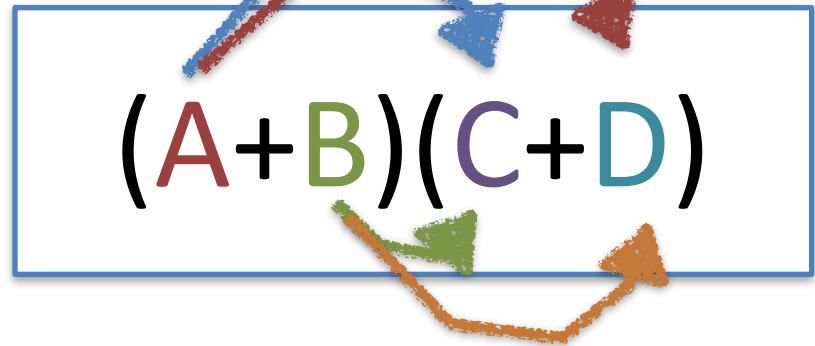
$$(x + 4)(x + 6)$$

By the end of this lesson, I will be able to answer the following questions...

1. How can I use the distributive property to multiply polynomials?
2. What is F.O.I.L.?
3. How can I apply polynomial operations to problems involving geometry (area)?

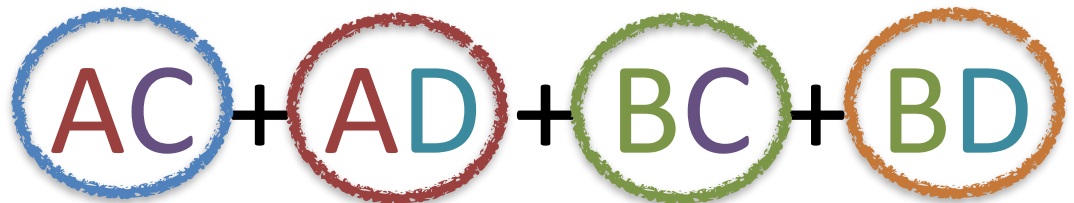
Vocabulary

- F.O.I.L. technique



The diagram shows the expression $(A+B)(C+D)$ enclosed in a blue rectangular box. Four colored arrows illustrate the FOIL process: a red arrow from A to D, a blue arrow from A to C, a green arrow from B to C, and an orange arrow from B to D.

$$(A+B)(C+D)$$



The expanded result is shown as four terms separated by plus signs: AC, AD, BC, and BD. Each term is enclosed in a colored circle: AC is blue, AD is red, BC is green, and BD is orange.

$$AC + AD + BC + BD$$

Prerequisite Skills with Practice

Simply the following using properties of exponents.

$$x^2 \cdot x^3$$

$$2x \cdot 6x^8$$

$$x^3 \cdot y^7$$

$$4x^3(-3y^7)$$

Explain the difference between difference in technique you'd use to simplify the following

$$2x^3 + 5x^3 \quad \text{vs.}$$

$$(2x^3)(5x^3)$$

Example one

Find the product of:

$$(2x - 1)(x + 18)$$

Example two

Find the product of:

$$(x^3 + 9x)(-x^2 + 11)$$

Example three

Find the product of:

$$(3x + 4)(x^2 + 6x + 10)$$

Ridiculously cool hamster...

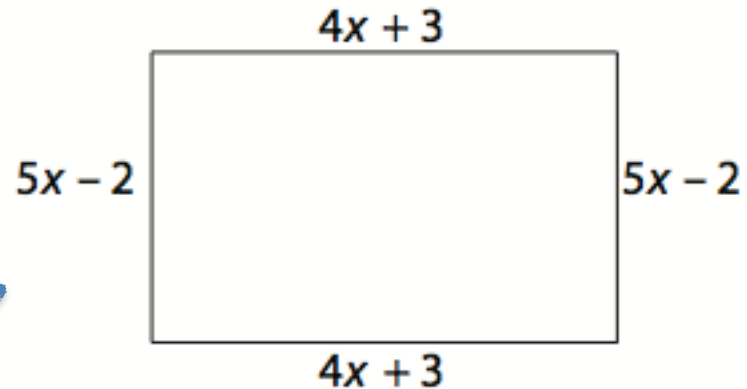


Don't dis the CLAW.
The CLAW sees all.

Example four

What is the perimeter of the rectangle in simplest form?

What is the area of the rectangle in simplest form?



THE END



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