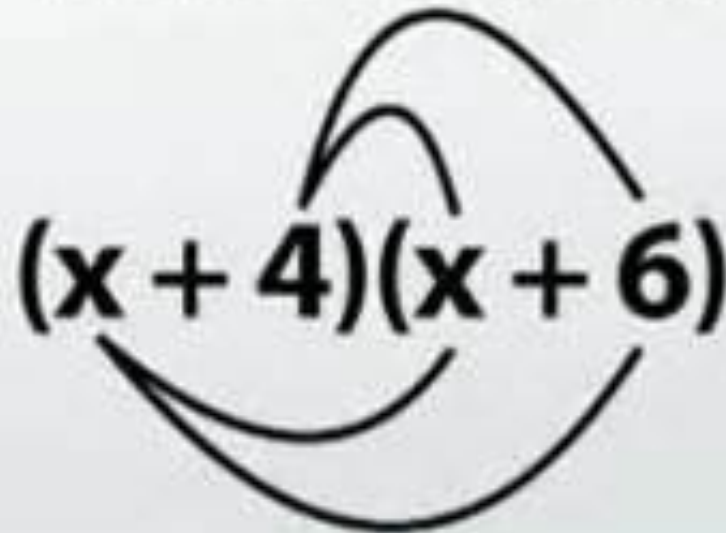


Lesson 1.2.2: Multiplying Polynomials

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 lines, one above and one below, connect the terms of the two binomials to form a shape resembling a claw. The top line connects the first x of the first binomial to the first x of the second binomial, and the second x of the first binomial to the second x of the second binomial. The bottom line connects the constant 4 of the first binomial to the constant 6 of the second binomial, and the constant 4 of the first binomial to the constant 6 of the second binomial.

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

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

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

The diagram shows the expansion of the product $(A+B)(C+D)$. A blue box encloses the expression. Four colored arrows originate from the terms in the first binomial and point to the terms in the second binomial: 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.

$AC + AD + BC + BD$

The diagram shows the resulting terms of the expansion: $AC + AD + BC + BD$. Each term is enclosed in a colored circle: AC is in a blue circle, AD is in a red circle, BC is in a green circle, and BD is in an orange circle.

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...

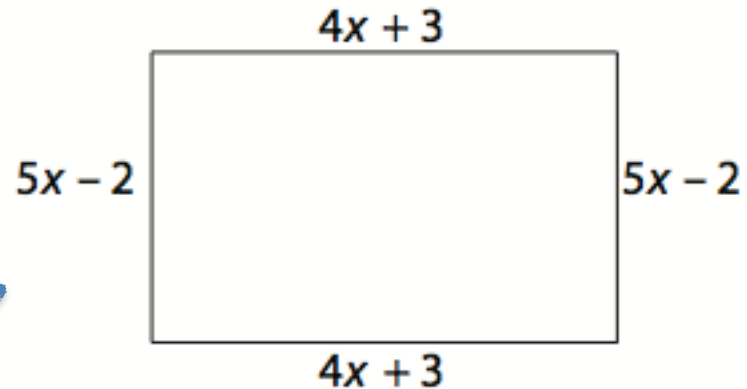


Don't dis the CLAW.
The CLAW sees all.

Example four

What is the perimeter of the rectangle in simplest form?

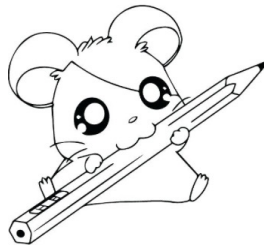
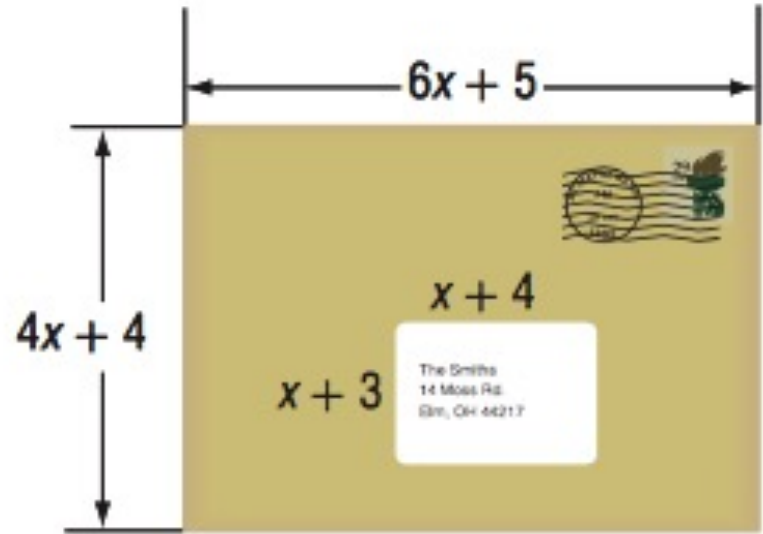
What is the area of the rectangle in simplest form?



Example Five

Find the Area of the Label in terms of "x"

What is the Area of the envelope that is NOT covered by the label in terms of "x"?



THE END



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