# Activator

## Simplify. New Today!

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

$$2xxx(5xxx)$$

$$10x^6$$

Did the exponent change?

Yes, We multiplied x's.

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## Simplify. Review 7.1

$$2x^3 + 5x^3$$

$$\Rightarrow 7x^3$$

Did the exponent change?

No Why? Combining like terms does not change exponents.

# Today's Objective

Unit 7
Lesson 2

Students will be able to multiplying using the "BOX METHOD."





# Announcements

# Box Method

**(1 of 4)**

## Definition

It is used when multiplying with variables.

## Facts

$x\,(x) = x^2$

$x\,(-4) = -4x$

$3\,(x) = 3x$

## Example(s)

| | |
|---|---|
| $+x^2$ | -4x |
| +3x | -12 |

# Today's New Vocab (2 of 4)

Multiply the monomial by the binomial.

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$x\,(x-4)$

Write down the boxes

$x^2 - 4x$

Can you combine these together?

No Why? The exponents are different.

| | $x$ |
|---|---|
| $x$ | $+x^2$ |
| $-4$ | $-4x$ |

Does $x(x-4) = x^2 - 4x$ ?

Yes, all we did was multiply.

A sign $(\pm)$ *must go in each box*.

# Today's New Vocab (3 of 4)

Simplify which means remove the ( ).

$x\,(x^2 + x - 4)$

| x | $x^2$ | + x | - 4 |
|---|---|---|---|
| | $+x^3$ | $+x^2$ | $-4x$ |

A sign $(\pm)$ *must go in each box.*

Write all boxes down

$x^3 + x^2 - 4x$

Is this the answer?

Are these like terms? No

Yes Why?

Same variable, NOT same exponent

No more like terms.

# Today's New Vocab (4 of 4)

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Simplify the expression.

$(x + 3)(x - 4)$

| | x | -4 |
|---|---|---|
| x | $+x^2$ | -4x |
| + 3 | +3x | -12 |

Write all boxes down

$$x^2 - 4x + 3x - 12$$

Combine Like Terms (CLT)

$$x^2 - 1x - 12$$

Can this be graphed? Yes

A sign $(\pm)$ *must go in each box*.

# Group Work Questions

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Directions: All groups, please do all of the questions. Use your notes from last class to help you. [Ask 2 people before you ask me.]

Last time, we did Lesson 7.2 Notes.

2nd Stop @ 9:03

3rd Stop @ 10:06

8th Stop @ 2:25

*One person from each group will present one question.

# Work Period

The expression $(x-6)^2$ is equivalent to (x - 6)(x - 6) and it can be multiplied.

| | $x$ | $-6$ |
|---|---|---|
| $x$ | $+x^2$ | - 6x |
| $-6$ | - 6x | + 36 |

Write all boxes down

$$x^2 - 6x - 6x + 36$$

Like Terms

$$x^2 - 12x + 36$$

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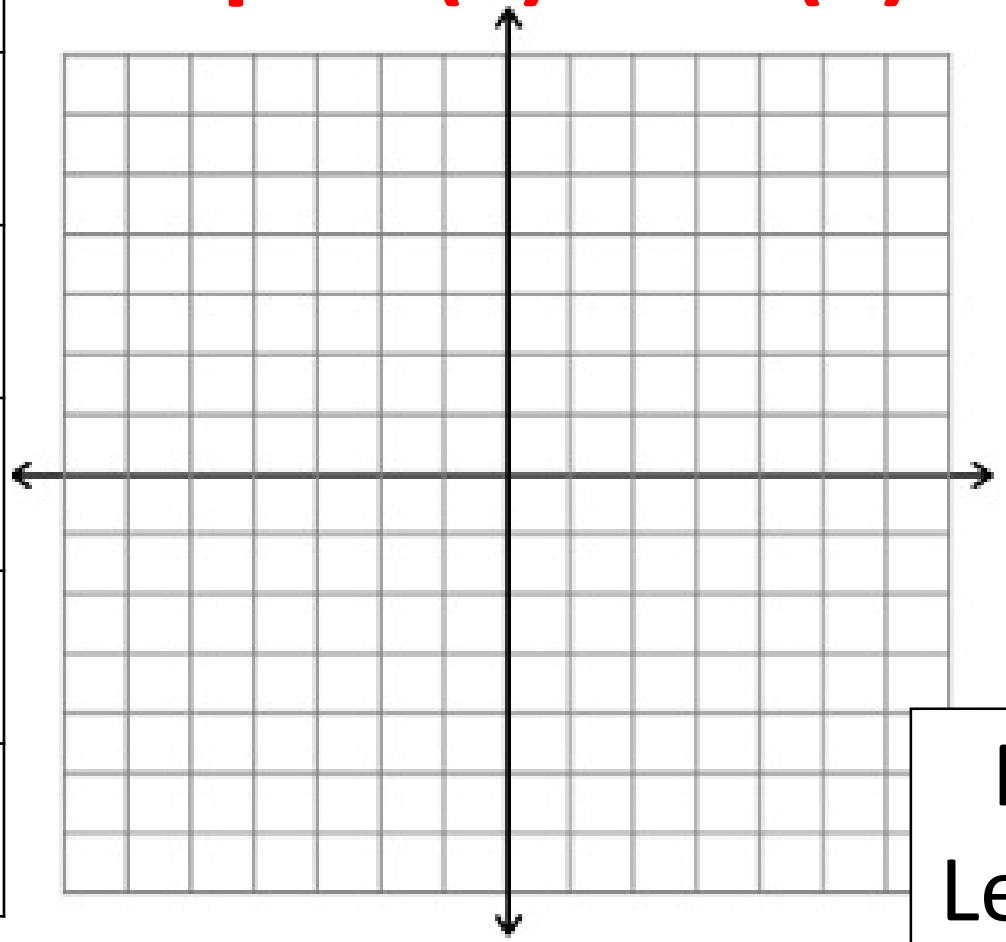
# Exit Ticket

$G(x) = x^2 - 12x + 36$ *and* $F(x) = (x - 6)^2$

| x | G(x) |
|---|---|
| 4 | 4 |
| 5 | 1 |
| 6 | 0 |
| 7 | 1 |
| 8 | 4 |

**Graph F(x) or G(x).** You did the algebra last class.



Does G(x) and F(x) have an infinite (ALL) number of solutions

Yes, because it is the same line G(x) = F(x).