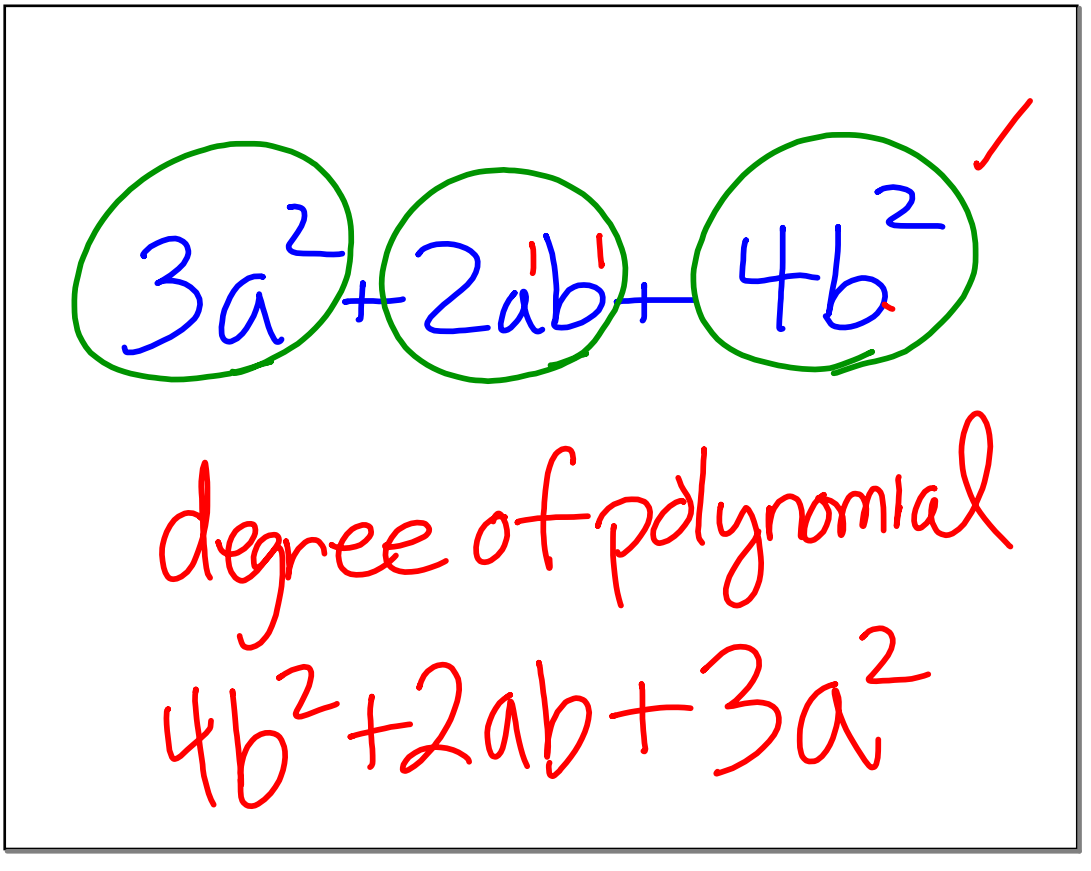
Algebra 1

Our Goal: To learn to multiply binomials

Warm Up: Linear and exponential function review

Today's homework
7.2 Exercises, p.369-370: 4-44 (evens)

Previous homework
· 7.1 Exercises, p.362-363: 6-46 (evens)
· Correct any test mistakes on a separate sheet of paper for partial credit



$\sqrt{7} \cdot n^4$

$7^{\frac{1}{2}} \cdot n^4$

$400x^8 + 600x^6$

degree binomial $= 8$

February 2, 2024

$500x^{8}y^{6}$

$75x^{0}$

$-j^{.8}$

$\frac{-j}{2}$

$7x^{2}+8yx+9y^{2}$

Determine whether the table represents a *linear* or an *exponential* function. Explain.

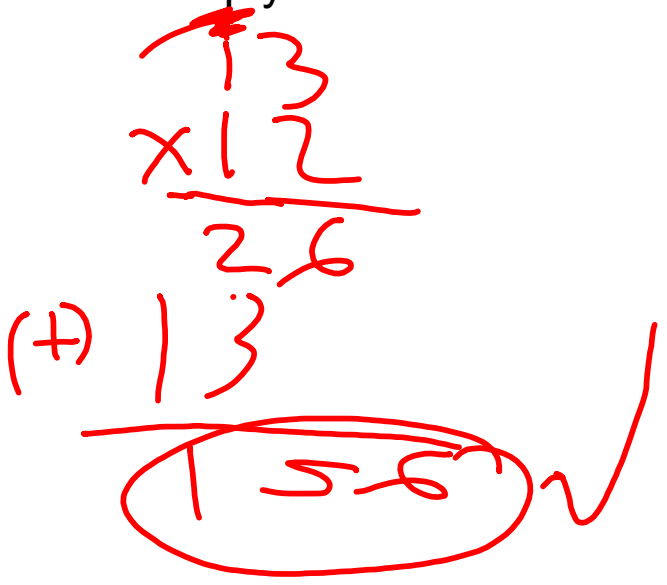
1.

x	2	3	4	5	6
y	−3	−2	−1	0	1

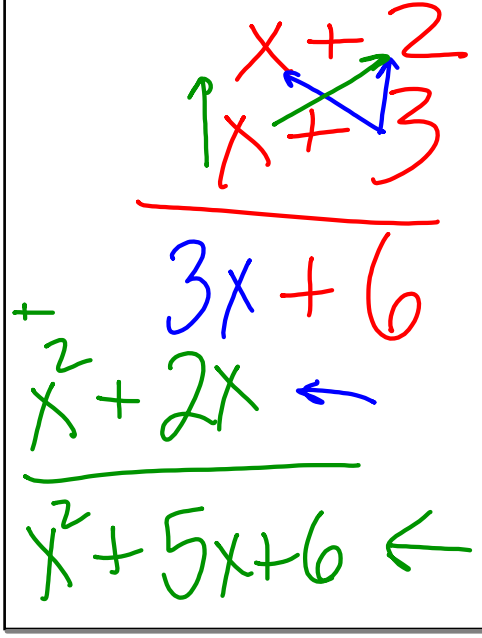
2.

x	0	1	2	3	4
y	0.125	1	8	64	512

What would you do if someone said to multiply $12 \cdot 13$?



What would you do if someone said to multiply $(x + 2) \cdot (x + 3)$?



Core Concept

FOIL Method

To multiply two binomials using the FOIL Method, find the sum of the products of the

First terms, $(x + 1)(x + 2)$ → $x(x) = x^2$

Outer terms, $(x + 1)(x + 2)$ → $x(2) = 2x$

Inner terms, and $(x + 1)(x + 2)$ → $1(x) = x$

Last terms. $(x + 1)(x + 2)$ → $1(2) = 2$

$$(x + 1)(x + 2) = x^2 + 2x + x + 2 = x^2 + 3x + 2$$

Find a. $(x + 2)(x + 5)$

F O I L

$x^2 + 5x + 2x + 10$

$x^2 + 7x + 10$

b. $(2x - 3)(x + 5)$

F O I

$2x^2 + 10x - 3x$

$- 15$

$2x^2 + 7x - 15$

Use the FOIL method to find the product.

1. $(y + 4)(y + 1)$

y^2+5y+4

2. $(z - 2)(z + 6)$

$z^2+4z-12$

3. $(p + 3)(p - 8)$

$p^2-5p-24$

4. $(r - 5)(2r - 1)$

$2r^2-11r+5$

Use the FOIL Method to find the product.

5. $(m - 3)(m - 7)$

6. $(x - 4)(x + 2)$

7. $\left(2u+\frac{1}{2}\right)\left(u-\frac{3}{2}\right)$

$2u^2-2\frac{1}{2}u-\frac{3}{4}$

8. $(n + 2)(n^2 + 3)$

$n^3+2n+3n+6$

$2\frac{1}{2}$

$2+\frac{1}{2}$

Find $(x + 5)(x^2 - 3x - 2)$.

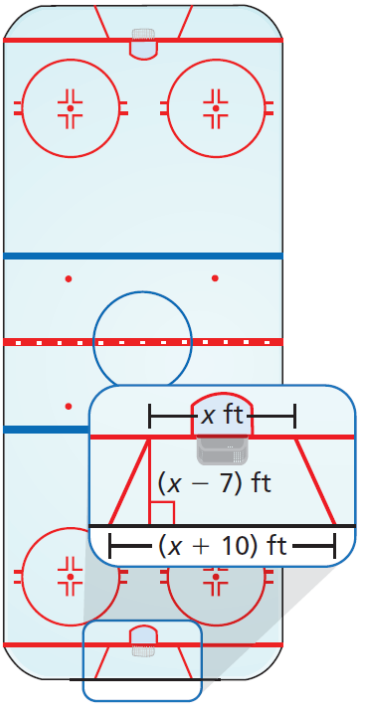
$x^3 - 3x^2 - 2x + 5x^2 - 15x - 10$

$x^3 + 2x^2 - 17x - 10$

In hockey, a goalie behind the goal line can only play a puck in the trapezoidal region

a. Write a polynomial that represents the area of the trapezoidal region.

b. Find the area of the trapezoidal region when the shorter base is 18 feet.



Find the product.

9. $(x + 1)(x^2 + 5x + 8)$

$x^3+6x^2+13x+8$

10. $(n - 3)(n^2 - 2n + 4)$

n^3-5n^2+10n
-12

$(x+3)^2 = (x+3)(x+3)$

$x^2+3x+3x+9$

x^2+6x+9

$$(2+3)^2 \neq 4+9$$

$$5^2$$

$$25$$