

Math-3A Lesson 2-1 (Common Factors, Multiplying Binomials)

$2x$ Factors: ____, ____.

$2(x + 3)$ Factors: ____, ____.

Why is $(x + 3)$ a factor? (it looks like a sum)

Because it is an _____ that is being multiplied by _____.

$$2 * (x + 3)$$

To Factor (verb) to break a number or an expression into _____ that are multiplied together.

$$10 \rightarrow 2 * 5$$

The expression $2x + 6$ has the _____ '2' in both terms

We can see this if we factor each term individually:

$$2x + 6 \rightarrow (\underline{\quad}) + (\underline{\quad})$$

"Factoring out" a common Factor from an expression means to rewrite the expression as the common factor multiplied by the expression.

$$2x + 6 \rightarrow \underline{\hspace{2cm}}$$

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



Factoring out the common factor: the " " of the _____ property.

Identify the factors in each expression.

$$5x(3x+1)(2x-5) \rightarrow \boxed{\quad, \quad, \quad, \quad}$$

$$x^2(x-2)(x+3) \rightarrow \boxed{\quad, \quad, \quad, \quad}$$

Factors can be an expression made up of terms being added.

Sometimes the common factor is an integer

$$3x - 12$$

$$\boxed{(\quad * \quad) - (\quad * \quad)}$$

$$3(x - 4)$$

$$-4x^2 + 8x + 12$$

$$\boxed{(\quad * \quad * \quad) + (\quad * \quad * \quad) + (\quad * \quad)}$$

$$-4(x^2 - 2x - 3)$$

Sometimes the common factor is a variable

$$x^2 + x$$

$$(x * x) + (1 * x)$$

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

$$(x * x^2) + (x * x) + x * 1$$

“x” is a common factor both terms

$$\boxed{\quad(\quad + \quad)}$$

$$\boxed{\quad(\quad + \quad + \quad)}$$

Sometimes the common factors are both an integer and a variable.

$$4x^2 - 16x$$

$$(4 * x * x) - (4 * 4 * x)$$

$$4x(x - 4)$$

Factor the following expressions

$-50b + 90$

$-10 + 20n^3$

$-60x^5 - 100x^4 - 30x^2$

$-81r - 63r^3 - 63r^4$

$-24x^4 + 40x^3 - 80x^2 + 16x$

$-40x^6 + 20x^2 + 4x + 8$

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

The "Box Method"

	x	4
x		
-3		

Standard Form
Quadratic Expression

$(x - 1)(x + 5)$ $(x + 2)(x + 6)$ $(x - 4)(x + 4)$

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