Key.

Algebra 1: 7.6 FACTORING QUADRATICS with a≠1 Guided Notes

Warm UP

Factor out the GCF $-2x^5 - 6x^3 - 16x^2$

$-2x^2(x^3 + 3x + 8)$

* Leading coefficient +tive.

Factor each of the following quadratic expression and fill the blanks

1. $x^2 + 7x + 10$ $(x+5)(x+2)$ (5, 2)

2. $x^2 - 7x + 10$ $(x-5)(x-2)$

3. $x^2 - 3x - 10$ $(x-5)(x+2)$

$x^2 + bx + c$		
When both b and c are positive, the second terms of the binomial factors are both _____ **positive/negative.**	When b is negative and c is positive, the second terms of the binomial factors are both _____ **positive/negative.**	When both b and c are negative, the second terms of the binomial factors have _____ **(same/opposite).** sign.

When Factoring trinomial where a≠1

Ex. $3x^3 + 15x^2 - 18x$

First: Bring GCF out / Factor out GCF

$3x(x^2 + 5x - 6)$

Second: Factorize remaing Trinomial

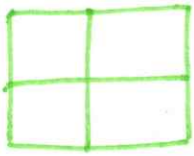
$3x(x+6)(x-1)$

Algebra 1: 7.6 FACTORING QUADRATICS with a≠1 **Guided Notes**

What if remaining Trinomial has a≠1?

Ex. $3x^2 + 7x + 2$ Use BOX METHOD

Step 1: Draw 2x2 square



Step 2: Put
1st term in → Upper left
3rd term in → lower right

$3x^2$	
	2

Step 3: Multiply 1st & 3rd term

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

Step 4: Find Factor pair of resulting product whose sum is the middle term (7x)

$6x^2$

$1x \cdot 6x$ → $1x + 6x = 7x$

$3x \cdot 2x$

Step 5: Place Factors in remaining squares

$3x^2$	$1x$
$6x$	2

Step 6: Find GCF of each row & column

	$3x$ ↑	1 ↑
x ←	$3x^2$	$1x$
2 ←	$6x$	2

one factor Rows → $(x+2)$

Second factor Columns → $(3x+1)$

$\therefore 3x^2 + 7x + 2 = (3x+1)(x+2)$

Ex 2: Factor $2x^2 + 7x + 5$

Ex 3: Factor $3x^2 - x - 2$

	x	-1
$3x$	$3x^2$	$-3x$
2	$2x$	-2

$-6x^2$

$-3x, 2x$ → Sum → $(-x)$

$6x \quad 1x$

$\therefore 3x^2 - x - 2 = (3x+2)(x-1)$

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Try it.....

1. $2x^2 - 2x - 4$

Take GCF out

$2(x^2 - x - 2)$ $\frac{-2}{1, -2}$

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

2. $3x^2 - 14x - 5$

	x	-5
$3x$	$3x^2$	$-15x$
1	x	-5

$-15x^2$

$-14x$ ($-15x$, $1x$)

$\therefore 3x^2 - 14x - 5 = (x-5)(3x+1)$

3. $2x^2 - 9x + 10$

$20x^2$

$-5x, -4x$

	$2x$	-5
x	$2x^2$	$-5x$
-2	$-4x$	10

$\therefore 2x^2 - 9x + 10 = (2x-5)(x-2)$

4. $3x^2 - 10x + 3$

$9x^2$

$-9x, -1x$

	x	-3
$3x$	$3x^2$	$-9x$
-1	$-x$	3

$\therefore 3x^2 - 10x + 3 = (x-3)(3x-1)$

HW: Pg 299 #23-48 ODD .