~~Factoring Review~~

# Factor Trinomials by inspection

* this works best with small numbers.

$2x^2 - 5x - 3$

$(2x+1)(x-3)$

$+\frac{-6x}{-5x}$

| | |
|---|---|
| $-3$ | |
| $-1$ | $3$ |
| $1$ | $-3$ |
| $-3$ | $1$ |
| $3$ | $-1$ |

$3x^2 + 16x + 5$ → 1 5, 5 1

$(3x + 1)(x + 5)$

$x$

$+ 15x$

$16x$

$6x^2 - x - 2$

$(6x \quad )(x \quad )$ X

OR

$(2x \quad )(3x \quad )$

$5x^2 + 9x - 2$ → −1 2, 1 −2, −2 1, 2 −1

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

$-x$

$+ 10x$

$9x$

# Trinomials with 2 variables

* GCF
* $ax^2 + bx + c$ → look at factors of 'a.c' that to 'b'.

of 6 that add to 5

2, 3

$x^2 + 5x + 6$

$(x+2)(x+3)$

$x^2 + 5xy + 6y^2$

$(x + 2y)(x + 3y)$

$2xy$

$3xy$

Factor: $a^2 - ab - 12b^2$

$(a - 4b)(a + 3b)$

$-4ab$

$+3ab$

$-ab$ ✓

$a^2 - a - 12$

$(a-4)(a+3)$

# 3.7 - Expanding (MULTIPLYING) Polynomials

1. FOIL-ish
2. Rectangle Diagram
3. Distributive Property

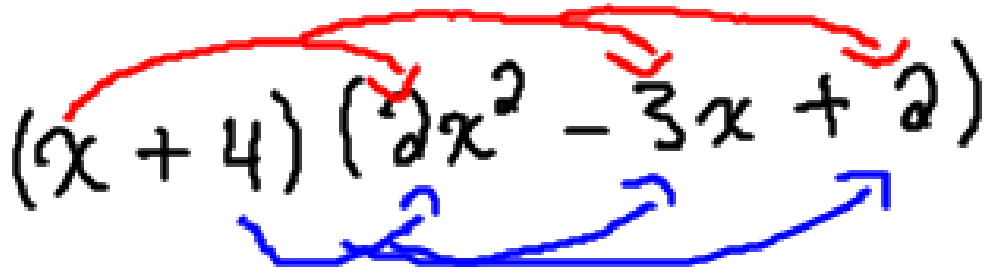
$(x+5)(x^2+2x-1)$

| | $x^2$ | $2x$ | $-1$ |
|---|---|---|---|
| $x$ | $x^3$ | $2x^2$ | $-x$ |
| $+5$ | $5x^2$ | $10x$ | $-5$ |

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

*collect like terms

$x^3 + 7x^2 + 9x - 5$




$2x^3 - 3x^2 + 2x + 8x^2 - 12x + 8$

$2x^3 + 5x^2 - 10x + 8$

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$(x+3)^2 = (x+3)(x+3) : x^2 + 6x + 9$

* square the first: $x^2$
* square the last: $3^2 = 9$
* multiply the two & double

$3 \cdot x = 3x$

$2(3x) = 6x$

Do p. 186 - #5-10

Small Factoring sheet
#1 - 4