Factoring Trinomials

#1 $x^2 - 17x + 42$

$-14 \times -3 = 42$

$-14 + -3 = -17$

$(x-14)(x-3)$

#2 $x^2 - 17x - 38$

$-19 \times 2 = -38$

$-19 + 2 = -17$

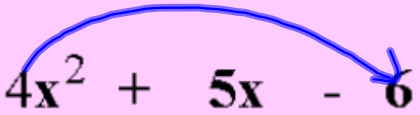
$(x-19)(x+2)$

#3 $4x^2 + 5x - 6$

What do you notice?

Factoring Using Decomposition

* If there is a numerical coefficient in front of x^2, then you must use the method called decomposition!!



$4x^2 + 5x - 6$

$8 \times -3 = -24$

$8 + -3 = 5$

$4x^2 + 8x - 3x - 6$

* Then do factor by grouping !!

Factor Completely!

1. $2x^2 + 5x + 3$

$2 \times 3 = 6$

$2 + 3 = 5$

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

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

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

2. $10x^2 + 13x - 3$

$15 \times -2 = -30$

$15 + -2 = 13$

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

$2x(5x-1) + 3(5x-1)$

$(2x+3)(5x-1)$

3. $2x^2 - x - 28$

$-8 \times 7 = -56$

$-8 + 7 = -1$

$2x^2 - 8x + 7x - 28$

$2x(x-4) + 7(x-4)$

$(2x+7)(x-4)$

4. $2x^2 + 6x + 4$

$4 \times 2 = 8$

$4 + 2 = 6$

$2x^2 + 2x + 4x + 4$

$2x(x+1) + 4(x+1)$

$(2x+4)(x+1)$

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

Practice Questions

#1 $2x^2 + 5x + 2$

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

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

#4 $x^2 + 7x + 10$

#5 $3x^2 + 16a + 5$

#6 $x^2 - 2xy - 15y^2$