

**Factoring Thought Process**

GCF =  $6xy$

1. Greatest Common Factor → Example:  $\frac{30x^2y}{6xy} + \frac{24xy}{6xy} - \frac{12xy^2}{6xy}$

• Do the terms have anything in common?

$= 6xy(5x + 4 - 2y)$

2. Differences of Squares → Example:  $49m^2 - 121n^2$   $a = \sqrt{49m^2}$   $b = \sqrt{121n^2}$

① 2 terms

② Subtraction

③ All variables and numbers are perfect squares.

$a = 7m$   $b = 11n$

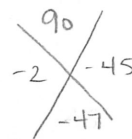
$(7m + 11n)(7m - 11n)$

3.  $ax^2 + bx + c, a = 1$  → Example:

• what multiplies to  $c$  and adds to  $b$



$x^2 - 47x + 90$   
 $(x - 2)(x - 45)$



4.  $ax^2 + bx + c, a \neq 1$  → Example:

• Use splitting the middle process

★ For steps, refer to page 9 in your notepacket ★

$3x^2 + 16x + 16$   
 $3x^2 + 4x + 12x + 16$   
 $x(3x + 4) + 4(3x + 4)$   
 $= (3x + 4)(x + 4)$



1.  $x^2 + 17x - 18$

$(x - 1)(x + 18)$

2.  $2n^2 + 8$

$2(n^2 + 4)$

3.  $x^2 - 24x - 81$

$(x - 27)(x + 3)$

