

Factoring Method #3: Trinomials

$ax^2 + bx + c$
 $3x^2 - 2x + 7$

$a=1$ (for today)

$x^2 - 3x - 10 = (x-5)(x+2)$
it's most odd up to -10
just the other multiply to -10

1	10
2	5
-1	-10
-2	-5

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

$x^2 + 6x - 16 = (x-2)(x+8)$

1	16
2	8
-1	-16
-2	-8

 $-2 \cdot 8 = 6$
 $-2 + 8 = 6$

$x^2 + 5x + 36 = (x \quad)(x \quad)$

1	36	→ 37
-1	-36	→ -37
2	18	→ 20
-2	-18	→ -20
3	12	→ 15
-3	-12	→ -15
4	9	→ 13
-4	-9	→ -13
6	6	→ 12
-6	-6	→ 0

DNF

$x^2 - 12x + 32 = (x-4)(x-8)$

1	32	→ 33
-1	-32	→ -33
2	16	→ 18
-2	-16	→ -18
4	8	→ 12
-4	-8	→ -12

$(x+3)(x-2) \xrightarrow{\text{divide}} x^2 - 2x + 3x - 6 \xrightarrow{\text{multiply}} x^2 + x - 6$
ROLL

FACTOR COMPLETELY:

$x^2 + 1x - 6 \xrightarrow{\text{TRI}} (x-2)(x+3)$

1	-6	→ -5
-1	6	→ 5
2	-3	→ -1
-2	3	→ 1

TRINOMIALS (a=1)

$ax^2 + bx + c \rightarrow (x \quad)(x \quad)$

- ① Create a factor table for the c-value
- ② Identify the pair of factors that adds to b-value
- ① Multiply to c-value
- ② Add to b-value

$x^2 - 8x + 12 \rightarrow (x-2)(x-6)$
 $a=1$ $b=8$ $c=12$

1	12	→ 13
-1	-12	→ -13
2	6	→ 8
-2	-6	→ -8
3	4	→ 7
-3	-4	→ -7