

Unit 7: Factoring

Review $\rightarrow (x+2)(x+3)$
 $x^2 + 3x + 2x + 6$
 $x^2 + 5x + 6$

Multiply

New $\rightarrow x^2 + 5x + 6$
 $(x+2)(x+3)$
 $2+3=5$
 $2 \cdot 3=6$

FACTORS

Examples:

① $x^2 + 11x + 18$

$(x+2)(x+9)$
 $2x$
 $9x$
 $2x+9x=11x$

$\frac{18}{1, 18}$
 $2, 9$
 $3, 6$
 $-1, -18$
 $-2, -9$
 $-3, -6$

$2+9=11$
 $2 \cdot 9=18$

② $x^2 - 3x + 2$

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

$\frac{2}{1, 2}$
 $-1, -2$
 $-1+2=-3$
 $-1 \cdot -2=2$

③ $x^2 - 6x + 8$

$(x-2)(x-4)$
 $-2x$
 $-4x$
 $-2x + -4x = -6x$

$\frac{8}{1, 8}$
 $2, 4$
 $-1, -8$
 $-2, -4$

$-2+4=-6$
 $-2 \cdot -4=8$

④ $x^2 - x - 56$

$(x+7)(x-8)$
 $7x$
 $-8x$
 $7x + -8x = -1x$

$\frac{-56}{1, -56}$
 $2, -28$
 $4, -14$
 $7, -8$
 $-1, 56$
 $-2, 28$
 $-4, 14$
 $-7, 8$

$-1 = 7 + -8$
 $-56 = 7 \cdot -8$