

Add / Multiply factoring

1. $x^2 + 9x + 18$

$(x+3)(x+6)$

add $\Rightarrow 9$

mult $\Rightarrow 18$
 $\underline{3+6}$

$$\begin{array}{r} 18 \\ 1 \ 18 \\ 2 \ 9 \\ \hline 3 \ 6 \end{array}$$

check:

$x(x+6) + 3(x+6)$

$x^2 + 6x + 3x + 18$

$x^2 + 9x + 18$

2. $x^2 - 6x - 27$

$(x+3)(x-9)$

add $\Rightarrow -6$

mult $\Rightarrow -27$
 $\underline{3+(-9)}$

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

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

add $\Rightarrow -3$

mult $\Rightarrow -10$
 $\underline{-5+2}$

4. $x^2 + 5x - 6$

$(x+6)(x-1)$

add $\Rightarrow 5$

mult $\Rightarrow -6$
 $\underline{6+(-1)}$

5. $x^2 - x - 12$

$(x+3)(x-4)$

add $\Rightarrow -1$

mult $\Rightarrow -12$
 $\underline{3+(-4)}$

6. $x^2 - 12x + 20$

$(x-2)(x-10)$

add $\Rightarrow -12$

mult $\Rightarrow +20$
 $\underline{-2+(-10)}$

7. $x^2 - 13x - 30$

$(x-15)(x+2)$

add $\Rightarrow -13$

mult $\Rightarrow -30$
 $\underline{2+(-15)}$

Section 3.5
Factoring trinomials with
G.C.F and Add/Multiply

example 1: $3x^2 - 6x + 3$

GCF: 3

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

add $\Rightarrow -2$
mult $\Rightarrow +1$

-1 + -1

$\rightarrow 3(x-1)(x-1)$

ex. 2: $2x^2 + 4x - 48$

GCF = 2

$2(x^2 + 2x - 24)$

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

add $\Rightarrow 2$
mult $\Rightarrow -24$

6 + -4