

Binomial GCF factoring

$$14x^2 + 35x$$

$$\textcircled{7} \cdot \textcircled{2} \cdot x \cdot x + \textcircled{7} \cdot \textcircled{5} \cdot x$$

$$\underline{7x(2x+5)}$$

$$36x^3 - 27x^2$$

$$\textcircled{9} \cdot \textcircled{4} \cdot x \cdot x \cdot x - \textcircled{9} \cdot \textcircled{3} \cdot x \cdot x$$

$$\underline{9x^2(4x-3)}$$

Factor each Trinomial

$$\underline{x^2 + 4x - 12}$$

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

Check:

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

$$x^2 + 4x - 12 \checkmark$$

1, -12
-4, 12
3, -4
-3, 4
2, -6
-2, 6

-1, -36
-2, -18
-3, -12
-4, -9
-6, -6

$$\underline{x^2 - 13x + 36}$$

$$(x-4)(x-9)$$

Check:

$$x^2 - 9x - 4x + 36$$

$$x^2 - 13x + 36 \checkmark$$

When first term does **not** have a coefficient of 1

1) $3x^2 - 13x - 10$

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

check:

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

$3x^2 - 13x - 10 \checkmark$

$\begin{matrix} 1, -10 \\ -1, 10 \\ 2, -5 \\ -2, 5 \end{matrix} = -3$

- ✓1) Find factors of 1st term
- ✓2) Find factors of last term
- 3) Add to be middle term

2) $5x^2 - 19x - 4 = 0$

$(1x - 4)(5x + 1) = 0$

$x - 4 = 0 \quad \text{or} \quad 5x + 1 = 0$

$x = 4$

$\frac{5x}{5} = \frac{-1}{5}$

$x = -1/5$

check: $5x^2 + 1x - 20x - 4$

$5x^2 - 19x - 4$

Homework:

p. 1018, # 16 - 24 all,
37 - 40 all