

Notes # 2 Factoring Out the Greatest Common Factor

G C F

The Greatest Common Factor comes to the front.

Ex. 1

$$9x + 15$$

$\begin{matrix} \wedge & \wedge \\ 3 & 3 \\ 3 & 5 \end{matrix}$

Prime Factorization

$$\begin{matrix} \text{GCF} \\ 3 \end{matrix} \left(\underbrace{3 \cdot 3x}_{\text{leftovers}} + \underbrace{3 \cdot 5}_{\text{leftovers}} \right)$$

looking for what they have in common

$$3(3x+5)$$

Ex 2.

$$2x + 8$$

$\begin{matrix} \wedge & \wedge \\ 2 & 2 \\ 1 & 4 \\ & \wedge \\ & 2 & 2 \end{matrix}$

$$2 \cdot 1x + 2 \cdot 2 \cdot 2$$

$$2(x+4)$$

Ex 3.

$$35x - 7$$

$\hat{7}5 \quad \hat{1}7$

$$\textcircled{7} \cdot 5 \cdot x - 1 \cdot \textcircled{7}$$

$$7(5x - 1)$$

Ex 4.

$$40x + 36$$

divide out
the the
GCF

$$4(10x + 9)$$

\uparrow
GCF

factor sheet

$$\underline{40}$$

$$1 \cdot 40$$

$$2 \cdot 20$$

$$\textcircled{4} \cdot 10$$

$$5 \cdot 8$$

$$\underline{36}$$

$$1 \cdot 36$$

$$2 \cdot 18$$

$$3 \cdot 12$$

$$\textcircled{4} \cdot 9$$

$$6 \cdot 6$$

try these:

$$\textcircled{1} 6x + 30$$

$$6(x + 5)$$

$$\textcircled{3} 15x - 25$$

$$5(3x - 5)$$

$$\textcircled{2} 28x + 4$$

$$4(7x + 1)$$

$$\textcircled{4} 12x - 30$$

$$6(2x - 5)$$