

Name _____

Date _____

Mr. Tallman

Do Now

Translate the following sentences into an expression or an equation. Use "n" as your variable.

1) Three times a number.

$$3n$$

2) 4 less than a number is 16

$$n - 4 = 16$$

3) Eight subtracted from five times a number.

$$5n - 8$$

Use the distributive property to simplify the following.

4) $3(x + 5)$

$$3x + 15$$

5) $-7(y + 12)$

$$-7y - 84$$

6) $-5(-3x - 8)$

$$15x + 40$$

Lesson #49 - Factoring with GCF

Prior Knowledge Vocab:

- A factor is a number that is multiplied by another number to get a product.
- Greatest Common Factor (GCF) is the largest factor two numbers have in common.

How can we write 6 as the product of two factors? 3 · 2

Example 1) Rewrite $5x + 10$ as the product of two factors.
GCF: 5 $5(x + 2)$

Example 2) Factor the expression $8n - 12$ to its simplest form.
GCF: 4 $4(2n - 3)$

Example 3) Factor the expression $12 + 20y$ to its simplest form.

GCF: 4

$$4(3 + 5y)$$

Now, You Try! Factor the following to their simplest forms.

4) $\frac{2x}{2} + \frac{2}{2}$ GCF: 2 $2(x+1)$	5) $\frac{5x}{5} - \frac{15}{5}$ GCF: 5 $5(x-3)$
6) $\frac{9}{3} + \frac{3x}{3}$ GCF: 3 $3(3+x)$	7) $\frac{16}{4} - \frac{4x}{4}$ GCF: 4 $4(4-x)$

On Your Own. Factor the following to their simplest forms.

8) $\frac{4x}{4} - \frac{16}{4}$ GCF: 4 $4(x-4)$	9) $\frac{3x}{3} + \frac{18}{3}$ GCF: 3 $3(x+6)$
10) $\frac{16x}{4} + \frac{12}{4}$ GCF: 4 $4(4x+3)$	11) $\frac{20x}{5} - \frac{15}{5}$ GCF: 5 $5(4x-3)$
12) $\frac{8x}{2} - \frac{10}{2} + \frac{2y}{2}$ GCF: 2 $2(4x-5+y)$	13) $\frac{5x}{5} - \frac{10y}{5} + \frac{25}{5}$ GCF: 5 $5(x-2y+5)$
14) $\frac{12x^2}{4} + \frac{8x}{4} - \frac{16}{4}$ GCF: 4 $4(3x^2+2x-4)$	15) $\frac{9xy}{3} + \frac{6x}{3} - \frac{18y}{3} + \frac{12}{3}$ GCF: 3 $3(3xy+2x-6y+4)$