TH-PA Pre-Algebra Week 8 11/3

$$25 + 37 + 75 = \underbrace{25 + 75}_{100} + 37$$

$$100 + 37 = \boxed{137}$$

<u>Commutative Property</u>

When <u>adding</u> or <u>multiplying</u> order does not matter.

$$25 * 13 * 4 = \underbrace{25 * 4}_{100} * 13$$

$$100 * 13 = \boxed{1300}$$

$$\boxed{a+b = b+a}$$

$$13 + (87 + 26) = (\underbrace{13 + 87}_{100}) + 26$$

$$100 + 26 = \boxed{126}$$

$$2 * (50 * 16) = (\underbrace{2 * 50}_{100}) * 16$$

$$100 * 16 = \boxed{1600}$$

<u>Associative Property</u>

Change parenthesis when adding or multiplying only.

$a + (b + c) = (a + b) + c$ $\qquad$ $a * (b * c) = (a * b) * c$

Identity Property

$8 + 0 = 8$

$8 * 1 = 8$

$$\boxed{\begin{aligned} a + 0 &= a \\ a * 1 &= a \end{aligned}}$$

Inverse Property

$8 + (-8) = 0$

Add its opposite $= 0$

$-3 + 3 = 0$

$\frac{8}{1} * \frac{1}{8} = 1$

inverse

Multiply by inverse

$\frac{3}{4} * \frac{4}{3} = 1$

$$\boxed{\begin{aligned} a + (-a) &= 0 \\ a * \frac{1}{a} &= 1 \quad a \neq 0 \end{aligned}}$$

1.) $14 + (m+n) = (14+m)+n$
Associative

2.) $p + 0 = p$
Identity

3.) $19 * 11 = 11 * 19$
Commutative

4.) $k * \frac{1}{k} = 1$ Inverse

5.) $6(xy) = (6x)y$
Associative

6.) $n = 1 * n$ Identity

Commutative (C)

Associative (A)

Identity (ID)

Inverse (IN)

Distributive Property

$4(x+5) = (x+5) + (x+5) + (x+5) + (x+5)$

$4 * x + 4 * 5$

$\boxed{4x + 20}$

$8(j - 2k + m) = \boxed{8j - 16k + 8m}$

$s(-6 + t) = \boxed{-6s + st}$

$-(3a + 4b) = \boxed{-3a - 4b}$

$-1(3a + 4b)$

$(3a - 8)5 = \boxed{15a - 40}$

1.) $6(3x - 8) = \boxed{18x - 48}$

2.) $-2(4p + 12) = \boxed{-8p - 24}$

$\boxed{12a} \boxed{+\ 4} + \boxed{6a} \boxed{+\ 8}$

"simplify"

"combine like terms"

$12a + 6a = 18a \qquad 4 + 8 = 12$

$\boxed{18a + 12}$

$5(2y + 1) - 7y = 10y + 5 - 7y$

$\boxed{3y + 5}$

1.) $3(a + 5) + 9$

$a + a + a + 15$

$3a + 15 + 9$

$\boxed{3a + 24}$

2.) $8c + 5(c - 3)$

$8c + 5c - 15$

$\boxed{13c - 15}$

3.) $-3(1 - 2n) + 2(n + 4)$

$-3 + 6n \qquad + 2n + 8$

$\boxed{8n + 5}$