TH-PA Pre-Algebra Week 8 11/2

$$25+37+75 = \underbrace{25+75}+37$$
$$100+37 = \boxed{137}$$

<u>Commutative Property</u>

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

$$25*13*4 = \underbrace{25*4}*13$$
$$100*13 = \boxed{1300}$$

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

$$13+(87+26) = (13+87)+26$$
$$100+26 = 126$$

$$2*(50*16) = (2*50)*16$$
$$100*16 = 1600$$

Associative Property

Change the position of the parenthese when adding or multiplying <u>only</u>.

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

Identity Property

$8 + 0 = 8$

$8 * 1 = 8$

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

What a number is

Inverse Property

$8 + (-8) = 0$

Add opposites $= 0$

$-3 + 3 = 0$

$a + (-a) = 0$

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

Multiply by inverses $= 1$

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

$a \neq 0$

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

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

Associative (a)

2.) $p + 0 = p$

identity (ID)

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

commutative (c)

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

inverse (IV)

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

Associative (a)

6.) $n = 1 * n$

Identity (ID)

commutative (c)
associative (a)
identity (ID)
inverse (IV)

$$3(8r + 6s + 4t) = 24r + 18s + 12t$$

$$8r + 6s + 4t + 8r + 6s + 4t + 8r + 6s + 4t$$

$$8r + 8r + 8r \quad 6s + 6s + 6s \quad 4t + 4t + 4t$$

$$24r + 18s + 12t$$

$$3(8r + 6s + 4t)$$

Distributive Property

$$3(8r) + 3(6s) + 3(4t)$$

$$\boxed{24r + 18s + 12t}$$

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

$$5(-6 + t) = \boxed{-30 + 5t}$$

$$a(8 + b) = \boxed{8a + ab}$$

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

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

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"

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

$\boxed{18a + 12}$

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

$10y + 5 - 7y = \boxed{3y + 5}$

$10y - 7y = 3y$

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

$3a+15+9$

$\boxed{3a+24}$

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

$8c+5c-15$

$\boxed{13c-15}$

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

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

$\boxed{8n+5}$

$-3+8=8+(-3)$

$8-3=5$