

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

Commutative Property

When adding or multiplying
order does not matter

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

$$a + b = b + a$$

$$13 + (87 + 26) = (13 + 87) + 26 = \underbrace{100 + 26} = \boxed{126}$$

$$2 * (50 * 16) = \underbrace{(2 * 50)} * 16 = 100 * 16 = \boxed{1600}$$

Associative Property

Change parenthesis when adding or
multiplying only.

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

Identity Property

$$8 + 0 = 8$$

$$8 * 1 = 8$$

$$a + 0 = a$$

$$a * 1 = a$$

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

Inverse Property

$$8 + (-8) = 0$$

Add its opposite = 0

$$-3 + 3 = 0$$

$$\left(\frac{8}{1}\right) * \frac{1}{8} = 1$$

inverse

Multiply by inverse = 1

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

$$a + (-a) = 0$$

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

6.) $n = 1 * n$
Identity

Commutative (C)
Associative (A)
Identity (ID)
Inverse (IN)

Distributive Property

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

$$\boxed{4 * x} + \boxed{4 * 5}$$
$$\boxed{4x + 20}$$

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

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

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

$$-1(3a + 4b)$$

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

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

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

$$-8p = -p - p - p - p - p - p - p - p$$

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

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

"simplify"
"combine like terms"

$$\boxed{18a + 12}$$

$$5(2y + 1) - 7y = \boxed{10y} + 5 \boxed{-7y}$$

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

$$3a + 15 + 9$$

$$\boxed{3a + 24}$$

$$\boxed{3y + 5}$$

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

$$8c + 5c - 15$$

$$\boxed{13c - 15}$$

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

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

$$\boxed{8n + 5}$$