

$$4)(-3)(-4) = +12 \quad \text{E OF E IS A FRIEND}$$

Ex. of Division:

$$1) (8)(4) = 12, \quad \frac{(+12)}{(+4)} = +3, \quad \text{or} \quad \frac{(+12)}{(+3)} = +4$$

$$2) (3)(-4) = -12, \quad \frac{(-12)}{(-4)} = +3, \quad \text{or} \quad \frac{(-12)}{(+3)} = -4, \quad \text{or} \quad \frac{(-12)}{(-3)} = +4$$

$$3) (-3)(4) = -12, \quad \frac{(+12)}{(-3)} = -4, \quad \text{or} \quad \frac{(+12)}{(-4)} = -3$$

14. Rules of Signs for the Multiplication and Division of Signed Numbers.

1. If both have the same sign, the product or quotient is positive.

2. If one number is positive and the other is negative the product or quotient is negative.

Ex.: $2x + 9 = 6$
 $2x + 9 - 9 = 6 - 9$
 $2x = -3$
 $x = \frac{-3}{2}$

15. Equations containing parentheses

Ex.: $2(x-4) - 3(x+1) = 8$
 $2x - 8 - 3x - 3 = 8$
 $2x - 3x - 8 - 3 = 8$
 $-x - 11 = 8$
 $-x = 19$
 $x = -19$

16. Equations with two unknowns

Ex.: $x + y = 6$ (their sum is 6)
 $2 - y = 2$ (their difference is 2)

If $x=4$, $4+y=6$, or $y=2$.

$$\begin{array}{rcl} x+y & = & 6 \\ x-y & = & 2 \end{array}$$

Subtract the second equation from the first

$$(x+y) - (x-y) = 6-2$$

Since $-(x-y)$ means $(-1)(x-y)$

$$x+y-x+y = 4$$

We now substitute $y=2$ for its value

$$x+2 = 6$$

17. Graphical representation of equations

Horizontal axis = x Vertical axis = y

$$A = (4, 2) \quad B = (-3, 2) \quad C = (2, -3)$$

Draw the graph of $x+y=6$