

Chapter P.7: Linear Equations

Linear Equations form a line
when graphed.

$$ax + b = 0$$

PE(MD)(AS) - (SA)(DM)EP

- Check Solutions....

Solve: $10x - 600 = 400$

$$\text{Solve: } 2(x-3) - 17 = 13 - 3(x+2)$$

$$\text{Solve: } \left(\frac{3x}{2} = \frac{x}{5} - \frac{39}{5} \right) 10$$

$$15x = 2x - 78$$

$-2x \quad -2x$

$$\frac{13x}{13} = \frac{-78}{13}$$

$$x = -6$$

$$\text{Solve: } \left(\frac{1}{x} = \frac{1}{5} + \frac{3}{2x} \right) 10x$$

$$x \neq 0$$

$$\begin{array}{r} 10 = 2x + 15 \\ -15 \quad -15 \end{array}$$

$$\frac{-5}{2} = \frac{2x}{2}$$

$$\boxed{x = -\frac{5}{2}}$$

$$\text{Solve: } \left(\frac{x}{x-3} = \frac{3}{x-3} + 9 \right) (x-3)$$

$$x \neq 3 \quad \begin{array}{r} x = 3 + 9x - 27 \\ -9x \quad -9x \end{array}$$

$$\frac{-8x = -24}{-8} \quad -8$$

$$\boxed{\cancel{x=3}}$$

NO SOL.

Three Types of Equations:

Identity - true for all real numbers

Conditional - true for at least one real but not all.

Inconsistent - not true for any real numbers

Determine the Type of Equation

$$\frac{2(x+1)}{2} = \frac{2x+3}{2}$$
$$x+1 = x + \frac{3}{2}$$
$$1 = \frac{3}{2}$$

no sol. Incon.

Solve for w: $2l + 2w = P$

$$\begin{array}{r} -2l \qquad -2l \\ \frac{2w}{2} = \frac{P-2l}{2} \end{array}$$

$$w = \frac{P-2l}{2}$$

Solve for P: $A = P + Prt$

$$\frac{A}{1+rt} = \frac{P(1+rt)}{(1+rt)}$$

$$P = \frac{A}{1+rt}$$

With absolute value equations

Must remember that the value in the absolute value can be - or +

$$|2x - 3| = 11$$

$$|3x - 1| = -5$$

$$2x - 3 = 11$$

$$\begin{array}{r} +3 \quad +3 \\ \hline \end{array}$$

$$2x = 14$$

$$x = 7$$

$$-(2x - 3) = 11$$

$$-2x + 3 = 11$$

$$\begin{array}{r} -3 \quad -3 \\ \hline \end{array}$$

$$\frac{-2x}{-2} = \frac{8}{-2}$$

$$x = -4$$

Suggested Homework:

Chapter P.7 pg. 81 #'s

9, 15, 19, 25, 35, 45, 49, 61,

65, 81, 87, 97, 103