3.1 Solving Linear Equations Using Addition and Subtraction.

<u>Linear equation</u>: an equation with a variable that has an exponent of one (1)

ie:

$x + 3 = 7$ Yes!
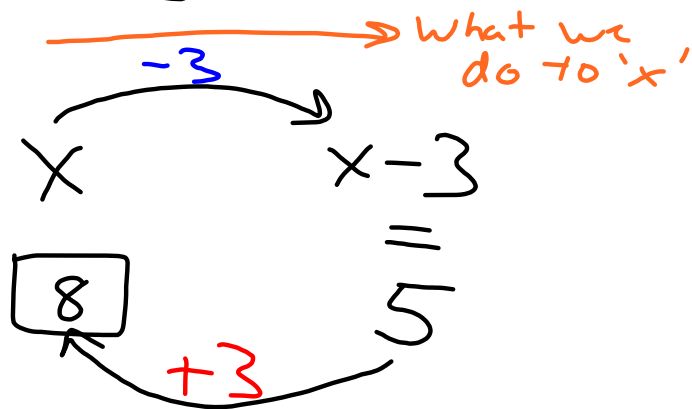
$x - 6 = 2$ Yes

$x^2 + 2 = 6$ No!

$x^3 + 9 = 63$ No!

Solve Lin. Equ.
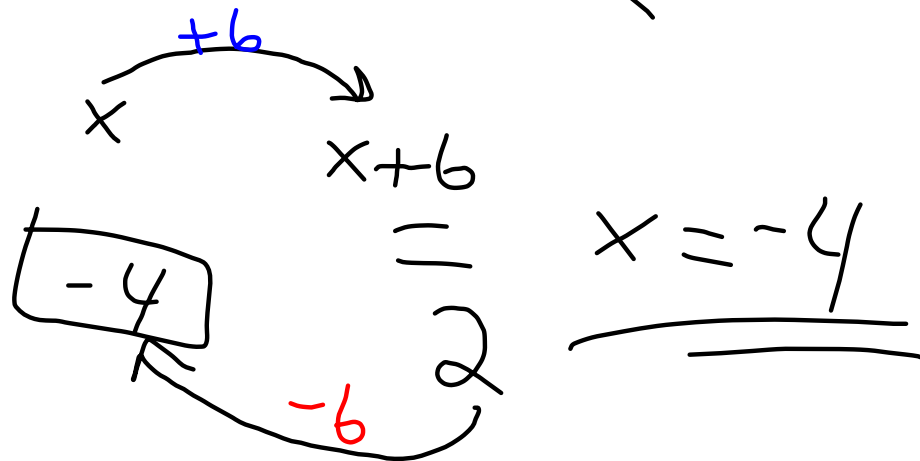
trying to get 'x' the variable by It self

ex1 $x - 3 = 5$

→ What we do to 'x'

-3

Script the Equations

x → $x - 3 = 5$

$\boxed{8}$ $+3$

← What we do to 5

ex2 $x + 6 = 2$

$+6$

x → $x + 6 = 2$

$\boxed{-4}$ -6

$$x = -4$$

Solve Lin. Equ.

ex1a)

$$x - 3 = 5$$
$$+3 \qquad +3$$
$$x \qquad = 8$$

$$8 - 3 \overset{?}{=} 5$$
$$5 = 5 \checkmark$$

ex2a)

$$x + 6 = 2$$
$$-6 \quad -6$$
$$x = -4$$

$$-4 + 6 \overset{?}{=} 2$$
$$2 = 2 \checkmark$$

$\underline{ex3}$ $x - 4 + 2 = 1$
$$x - 2 = 1$$
$$+2 \quad +2$$
$$x = 3$$

$\underline{ex4}$
$$x + 2 = 2$$
$$-2 \quad -2$$
$$x = 0$$

$\underline{ex5}$
$$2x + 1 - x - 6 = 3$$
$$x - 5 = 3$$
$$+5 \quad +5$$
$$x = 8$$

3.2.
Solving Equations w/ Multiplication + Division

Rotten Kid. Th^e

What you do to one kid (side of the equ.)

You must do to the other (side of the equ.)

$\underline{\text{Solve:}}$

$$4x = 12$$

$\times$ $*4$ $\dfrac{4x}{12}$

$\boxed{3}$ $\div 4$ $\underline{\underline{x = 3}}$

$\underline{\text{Solve:}}$ $\dfrac{-5x}{-5} = \dfrac{100}{-5}$

$$\underline{\underline{x = -20}}$$

Solve

$$6 \cdot \left(\dfrac{x}{6} \right) = 30 \cdot 6$$

x $\div 6$ $\dfrac{x}{6} = 30$

$\boxed{180}$ $*6$

$$\underline{x = 180}$$

Solve:

Vertical

$$\frac{4x}{4} = \frac{12}{4}$$

$$x = 3$$

$$\frac{3}{2} \cdot \frac{\cancel{10}^{5}}{1} = \frac{3}{2}\left(\frac{2}{3}m\right)$$

$$15 = m$$

Side Bar

5c   the opp.
        is to ÷ by 5

$\frac{2}{3}$ * m

the opp. of
* by $\frac{2}{3}$ is
to ÷ $\frac{2}{3}$

÷ by a fraction
is the same as
* by the recip.

Solve:

$$\frac{5}{3}\left(-\frac{3}{5}x\right) = 24.\cancel{5}^{8}\cdot\frac{5}{\cancel{1}}$$

$$x = {}^{-}40$$

O.T.L.

In Today

② Pg 135 : 3-15 (a) ; 25-39 (o)

③ Pg 136 : 57, 58,59

Use the chart above. Do 58 & 59
and copy & fill in the Chart.

O.T.L.

Pg 141-142 :

17-49 (o), 48