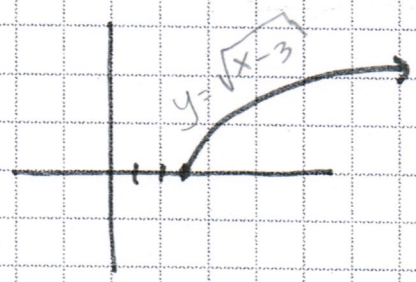
◎ I can solve an equation with a $\sqrt{\text{sq root}}$ or an $|\text{abs}|$

SOLVE GOAL $\Rightarrow$ Isolate the symbol $\sqrt{\ }$ or $|\ \ |$ first

$\rightarrow$ get symbol to one side of = sign

Ex 1 $\sqrt{x-3} = 6$

$(\sqrt{x-3})^2 = (6)^2$



$x - 3 = 36$

$+3 \quad +3$

$\boxed{x = 39}$

Ex 2] $2\sqrt{x} - 4 = 6$

$+4 \quad +4$

$\frac{2\sqrt{x}}{2} = \frac{10}{2}$

$\sqrt{x} = 5$ $\rightarrow$ symbol isolated

$\sqrt{x}^2 = 5^2$

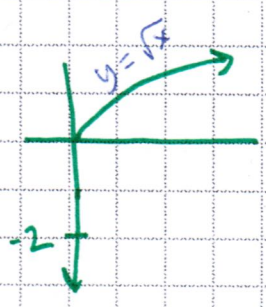
$x = 25$

$4x = 100$ $\boxed{x = 25}$

Ex3] $\sqrt{x}+4=2$

$$\sqrt{x}+4=2$$
$$\quad -4 \quad -4$$
$$\sqrt{x}=-2$$

$\sqrt{\ } \neq$ neg # $\Longrightarrow$ no solution



$$\sqrt{x}^2=(-2)^2$$
$$x=4$$

Check: $\sqrt{4}+4=2$

$$2+4=2$$
$$6=2\ ?$$

— NO SOLUTION —

Absolute value → symbol $|\quad|$

↳ dist from zero

Ex1] $|x|=100$

$+ \swarrow \quad \searrow -$

$x=100 \quad x=-100$

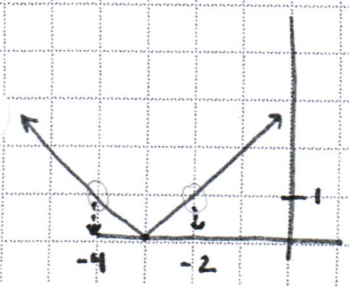
Ex3] $|x|=-3$

If you isolate your |abs| (or √ and it is = to $\boxed{\text{neg \#}}$ then $\boxed{\text{NO SOL!}}$

Ex2] $2|x+3|+8=10$

$$\quad -8 \quad -8$$
$$\frac{2|x+3|}{2}=\frac{2}{2}$$
$$|x+3|=1$$

$+ \swarrow \quad \searrow -$



$x+3=1 \qquad x+3=-1$

$\quad -3 \quad -3 \qquad -3 \quad -3$