Math 418!

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

Solve $|x^2 + 4| = 14$

$x^2 + 4 = 14$

$x^2 = 10$

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

$x = \sqrt{10}$

$x = \pm\sqrt{10}$

$x^2 + 4 = -14$

$x^2 = -18$

~~$x = \pm\sqrt{-18}$~~

No Sol'ns

$|x| = \sqrt{10}$

$x = \pm\sqrt{10}$

$x = \pm\sqrt{10}$

$(-\sqrt{10})^2 = (-\sqrt{10})(-\sqrt{10})$

$= +10 = 10$

$v^2 = 4$

$v = \pm 2$

$\sqrt{8} = \sqrt{4 \cdot 2} = \sqrt{4} \cdot \sqrt{2}$

$= 2\sqrt{2}$

$\frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$

$\frac{1}{0}$

$|30 + 2| \geq 40$

$|\square| \geq \square$

$\square \leq -\square$

$\square \geq \square$

$30 + 2 \leq -40$

$70 + 2 \leq 0$

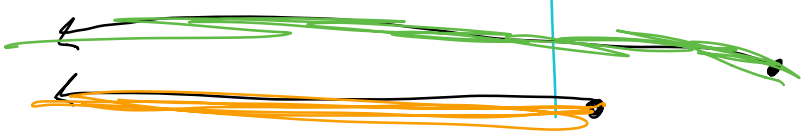
$70 \leq -2$

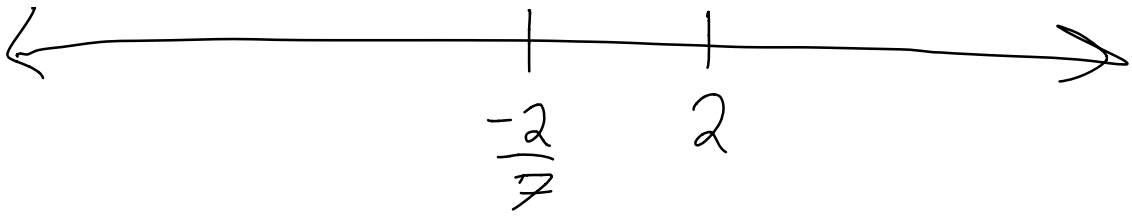
$\theta \leq \frac{-2}{70}$

$30 + 2 \geq 40$

$+2 \geq \theta$

$\theta \leq 2$





$(-\infty, 2]$

$(-\infty, -\frac{2}{7}] \cup (-\infty, 2]$

Webassign Assignment
Due Sunday 11:59PM

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Fun with Functions

Functions Ex: $f(x) = x^2$

$g(x) = 3x+1$

Height(Person) = Height of That Person

Def'n: A function is a rule assigning to each input an output.

Notation: $f(x) = x^2$

f of x = x^2

x is the input
x^2 is the output
Squaring is the rule.

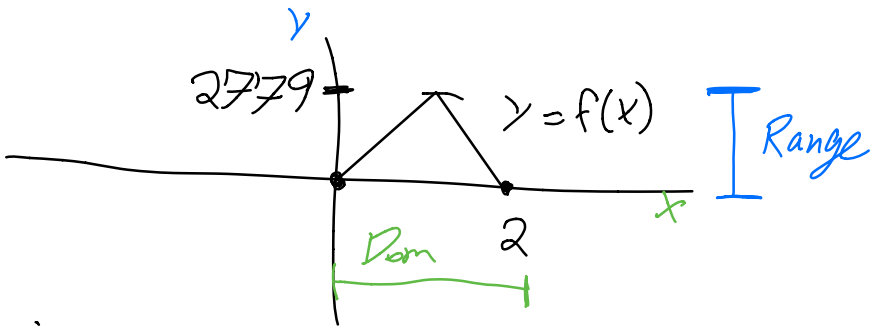
Def'n: The Domain of f(x) is the set of all allowed/defined inputs for f(x)

Def'n: The Range of f(x) is the set of all outputs for f(x)

Notation: $Dom(f) = D_f = \{x \mid f(x) \text{ defined}\}$

$Range(f) = R_f = \{f(x) \mid x \text{ in } Z\}$

Dom(f)



$Dom(f) = [0, 2]$

$Range(f) = [0, 2779]$