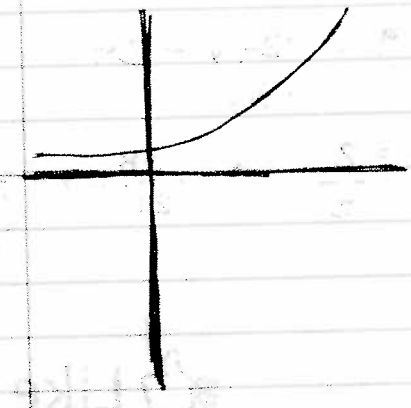
# Graphs / Parent Functions

## Exponential

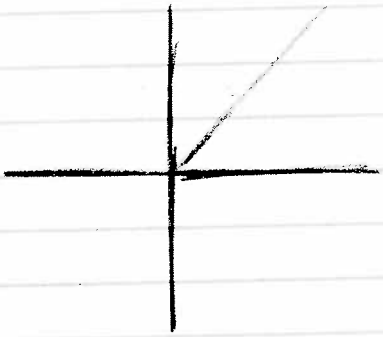


- $a \cdot b^x = f(x)$

D: $x \in \mathbb{R}$

R: $0 < y$

## Linear



- $f(x) = mx + b$

slope

y-intercept

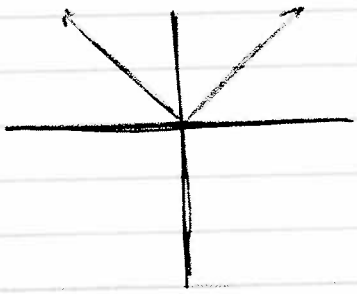
Domain = all reals OR

Range

$x \in \mathbb{R}$

$y \in \mathbb{R}$

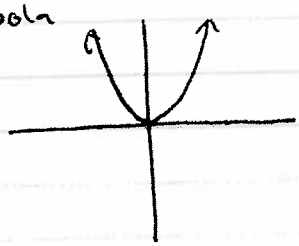
## Absolute Value



D = $x \in \mathbb{R}$

R = $y \geq 0$

## Parabola



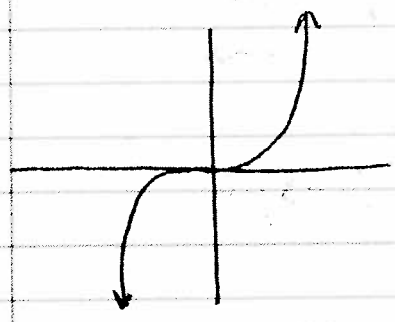
$y = x^2$

D: $x \in \mathbb{R}$

R: $y \geq 0$

## Parent Functions

### Cubic



$y = x^3$

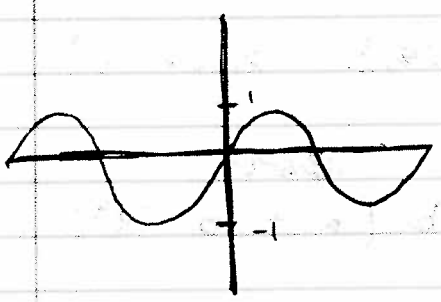
all possible inputs

D: $x \in \mathbb{R}$

R: $y \in \mathbb{R}$

all possible outputs

### Sinusoidal

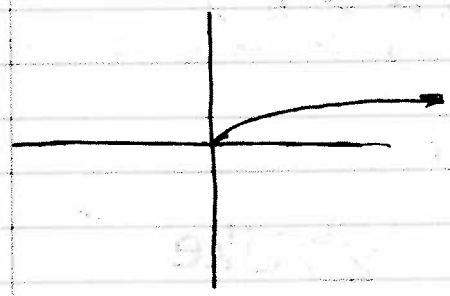



$y = \sin(x)$

D: $x \in \mathbb{R}$

R: $-1 \leq y \leq 1$

### Square Root

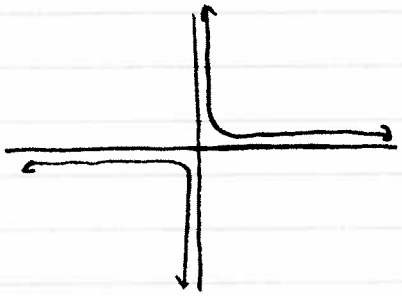


$y = \sqrt{x}$

D: $0 \leq x$

R: $0 \leq y$

## Hyperbola

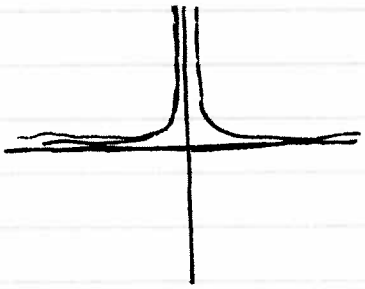


$y = \frac{1}{x}$

D: $x \in \mathbb{R}$, $x \neq 0$

R: $y \in \mathbb{R}$, $y \neq 0$

## Inverse Squared



$y = \frac{1}{x^2}$

D: $x \in \mathbb{R}$, $x \neq 0$

R: $y > 0$, $\mathbb{R}^+$