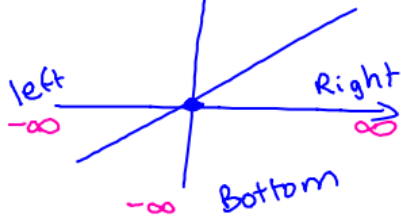


Section 1.3

Domain $\rightarrow$ set of input values (x)

Range $\rightarrow$ set of output values (y)

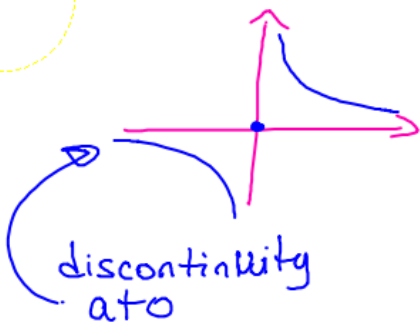
Linear ∞ Top



D
 $(-\infty, \infty)$
 All real numbers.
 $\mathbb{R}$

R
 $(-\infty, \infty)$

Symmetry



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

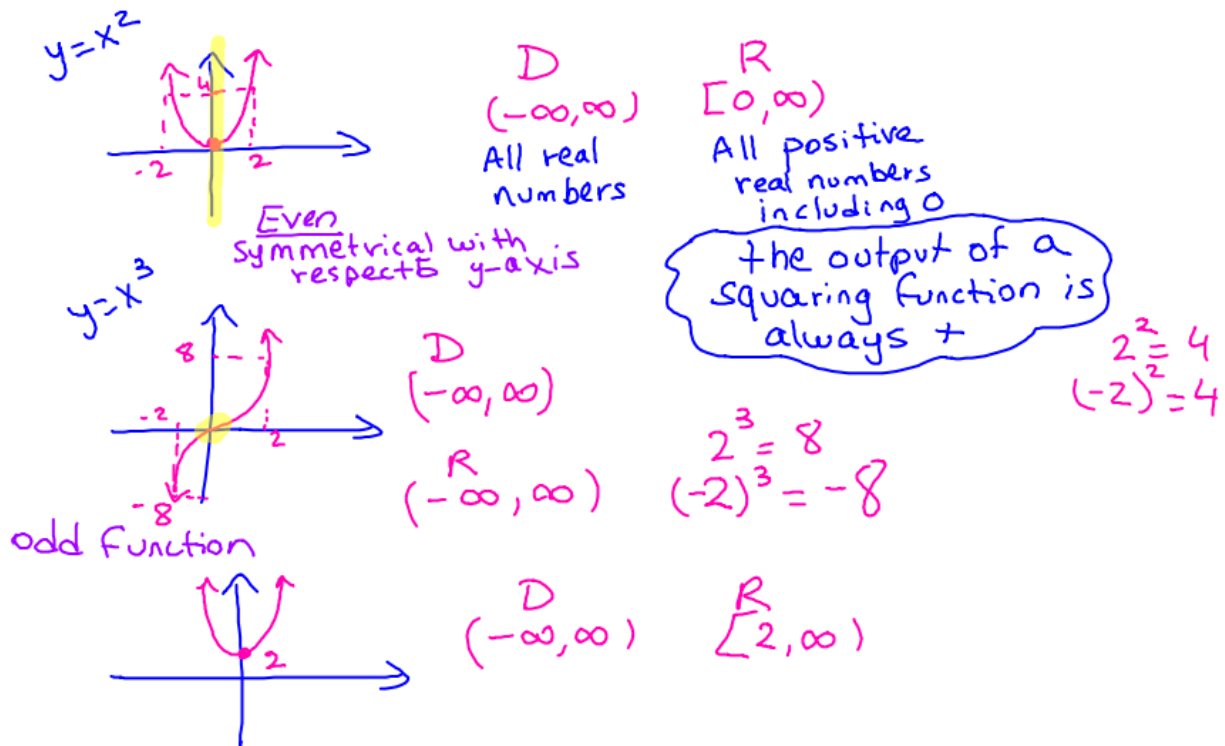
D
 $(-\infty, 0) \cup (0, \infty)$
 All real numbers
 except 0

R $(-\infty, 0) \cup (0, \infty)$

} we cannot divide by 0

$$y = \frac{3}{x+5}$$

D: ? $(-\infty, -5) \cup (-5, \infty)$
 Symmetry.



An even function is a function whose graph is symmetrical with respect to the y-axis.

$$f(-x) = f(x)$$

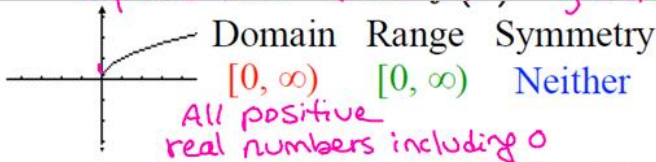
Same output for opposite input

An odd function is a function whose graph is symmetrical with respect to the origin.

$$f(-x) = -f(x)$$

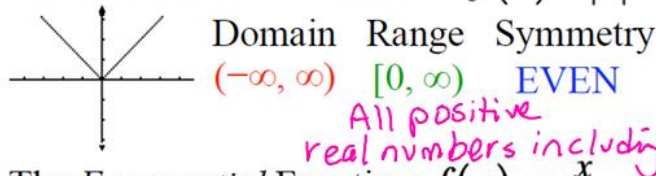
↳ opposite output for opposite input values.

Square root (Radical) $y = \sqrt{x}$



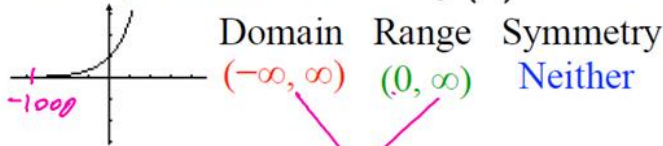
$\sqrt{-}$
 we cannot $\sqrt{\quad}$
 a negative
 $\sqrt{25} = 5$
 $\sqrt{-25} \times$

The Absolute Value Function: $f(x) = |x|$



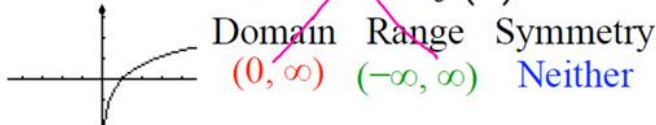
$|5| = 5$
 $|-5| = 5$
 the output of abs
 is always $\oplus$

The Exponential Function: $f(x) = e^x$



exp and log
 are inverses.

The Natural Log Function: $f(x) = \ln x$



	D	R	Sym	Graph
Exp	$(-\infty, \infty)$	$(0, \infty)$	N	
log	$(0, \infty)$	$(-\infty, \infty)$	N	

x-axis
 Asymptote

y-axis
 Asymptote