

# 1.1 Functions

set builder notation

$$\{x \mid -3 < x \leq 7, x \in \mathbb{R}\}$$

"Set of #'s  $x$  such that..."

↑  
properties

↑  
~~Real~~ "for all numbers"

Real numbers

## Ex 2 Interval Notation

for inequalities

use  $( )$  or  $[ ]$   
 $< >$  or  $\leq \geq$

$$a < x \leq b \rightarrow (a, b]$$

$-\infty, \infty \rightarrow$  use  $( )$

a)  $-8 < x \leq 16$   $(-8, 16]$

b)  $x < 11$   $(-\infty, 11)$

## Ex 3 Function

A function is a special relation  
one-to-one

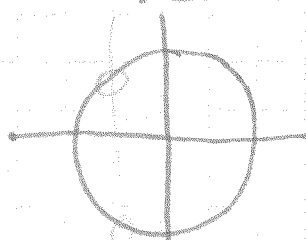
one input  $\rightarrow$  one output

Test for a function

Vertical line test



function



not a function



not a function