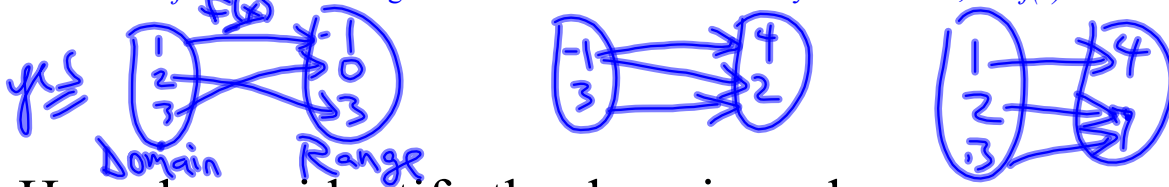


# Functions

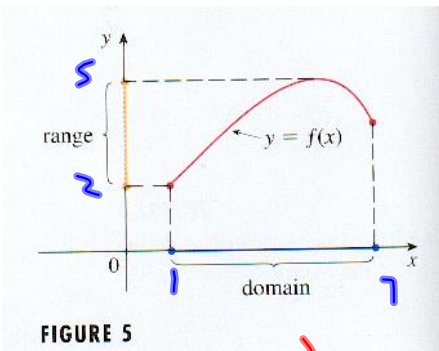
What is a function?

A function is a rule that assigns to each element in a set  $A$  exactly one element, called  $f(x)$ .



How do we identify the domain and range of a function?

- First must know what these terms mean...define each.
- Must know how to indicate domain and range using correct notation



Domain:  $1 \leq x \leq 7$  (Set and Bracket)  
 $\{x \mid 1 \leq x \leq 7, x \in \mathbb{R}\}$

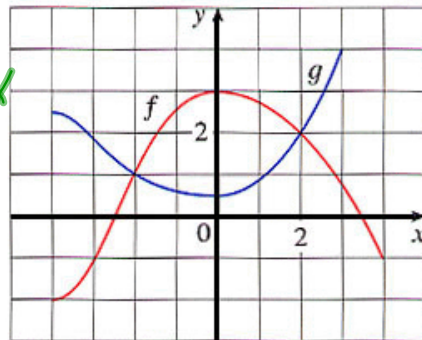
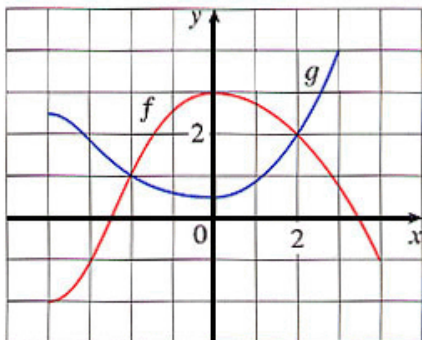
Bracket:  $[1, 7]$   
 Range:  $2 \leq y \leq 5$  (square...)

$\{y \mid 2 \leq y \leq 5, y \in \mathbb{R}\}$

Bracket:  $[2, 5]$   
 Smallest

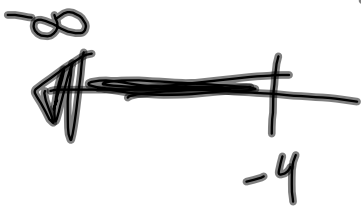
Bracket:  
 $(3, \infty)$   
 $x > 3$

Examples:



$$-2 < x \leq 7 \Rightarrow (-2, 7]$$

$$x < -4, x \in \mathbb{R} \Rightarrow (-\infty, -4)$$



$$-8 \leq x < 7 \Leftarrow [-8, 7)$$