Lecture 08/28/23

## Inputs and Outputs of Functions

Today is largely a review; that is okay! It's always nice to see things a few times :). We will focus on how functions model real world scenarios!

Recall: A function is a relation in which every $x$-coord (input) is related to exactly one y-coord (output).

Another way we may view functions is that they are a rule that assigns each input to exactly one output

Function Notation: We usually write a function as

$$f(x) = y$$

- $f$: name of function
- $x$: input var.
- $y$: output var.

What is the difference between

Evaluate $f(3)$ "What y value relates to 3"

and

Solve $f(x) = 3$ "What x value relates to 3"

Ex: Let $f(t)$ be the total number of reported flu cases at UNL by the $t$-th day of the semester.

a) What does $f(103)$ mean?

It is the number of reported flu cases at UNL by the 103rd day of the semester

Always write in a complete sentence!

b) What does $f(50)$ mean?

It is the number of reported flu cases at UNL by the 50th day of the semester.

c) What does $f(15) = 73$ mean?

There were 73 reported flu cases at UNL by the 15th day of the semester.

Ex: Let $g(x) = x(x^2 - 2)$. Find the equation for $g(x+4)$. Identify the input and the output.

$$g(x+4) = (x+4)((x+4)^2 - 2)$$

$x+4$ is the input $(x+4)((x+4)^2 - 2)$ is the output.