PRECALC

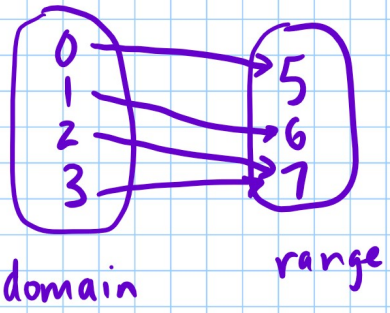
1. Put unit 1 assignments in order
2. Make sure your name is on front sheet
3. Staple together
4. Hand In

Questions from p72-73?

Section 2.1 Functions

Let X and Y be 2 nonempty sets. A <u>function</u> associates each element in X (domain) with exactly one element in Y (range).

ex:



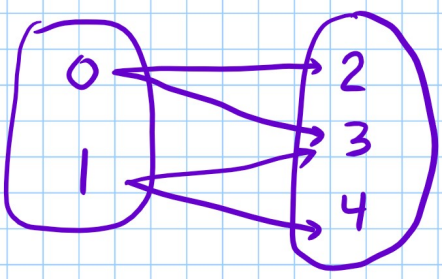
Discrete / finite # of elements ⇒ is a function

$D = \{0, 1, 2, 3\}$

"roster notation"

$R = \{5, 6, 7\}$

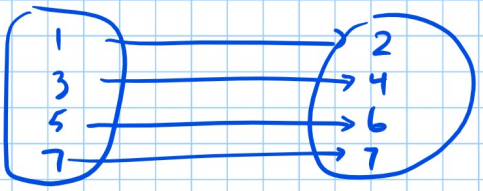
ex:



<u>Not</u> a function

Is the set of ordered pairs a function?

$\{(1,2), (3,4), (5,6), (7,7)\}$



Yes

$D = \{1, 3, 5, 7\}$

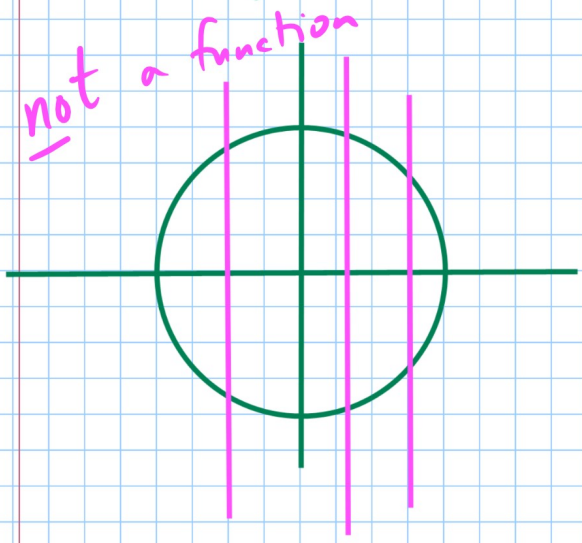
$R = \{2, 4, 6, 7\}$

How about $\{(0,1),(0,2),(1,3),(3,5)\}$?

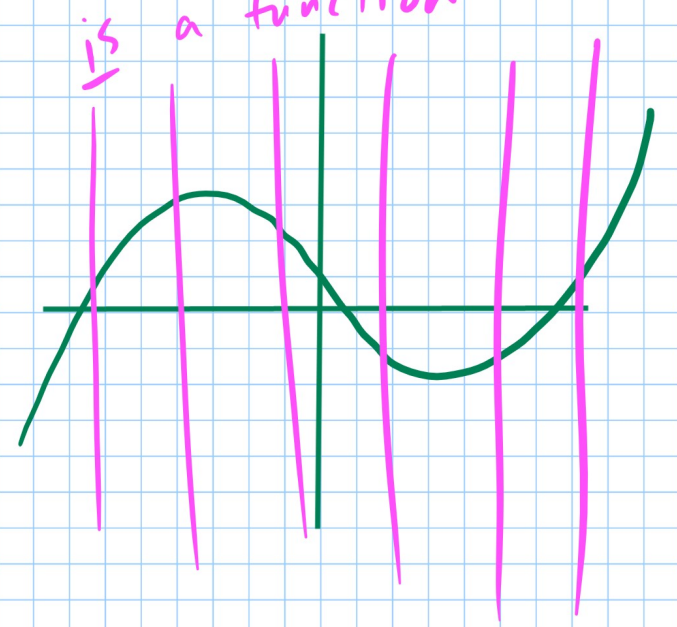
0 has 2 different y's so it's not a function

Graphically, a graph represents a function if no vertical line passes through the graph more than once (Vertical Line Test)

not a function



is a function



$f(x)$ is function notation. It is read "f of x"

Evaluating a function means to plug in for x.

ex: $f(x) = x^2 + 3x + 5$

$f(3) = 3^2 + 3\cdot 3 + 5 = 9 + 9 + 5 = 23$

$f(-2) = (-2)^2 + 3(-2) + 5 = 4 - 6 + 5 = 3$

$f(A) = A^2 + 3A + 5$

$f(2+h) = (2+h)^2 + 3(2+h) + 5$

$= 4 + 4h + h^2 + 6 + 3h + 5$

	2	h
2	4	2h
h	2h	h^2

$= h^2 + 7h + 15$

PREVIEW

$$f'(x) = \lim_{h \to 0} \frac{f(x+h) - f(x)}{h}$$

The domain of a function is the set of all possible x-values. So the domain of $f(x) = \sqrt{x}$ is $x \geq 0$. In interval notation, $D = [0, \infty)$

ex: Domain of $f(x) = \frac{3}{x-2}$

you cannot divide by zero so $x - 2 \neq 0$

$x \neq 2$

$D = (-\infty, 2) \cup (2, \infty)$

↑ union

Unit 2 - Assignment 1

p96-99 1-15 odd, 33-63 odd, 73, 75, 77