

Notes 2-1

Sec 1 H

Functions Introduction

Unit 2

Vocabulary:

- Function: like a machine ** Every input has exactly 1 output.*
- Domain: Any input, x value
- Range: Any output, y values **RYAN**
- Mapping Diagram:



Determine if the following relationships are functions and then state the domain and range.

Ex 1: $\{(3,6), (4,10), (8,12), (2,6)\}$ **YES.**
 $D: \{2, 3, 4, 8\}$
 $R: \{6, 10, 12\}$

Ex. 2:

x	y
6	2
10	4
6	5
9	8

NO, because
 $6 \rightarrow 2$ & $6 \rightarrow 5$.
 1 input has 2 outputs.

Ex. 3:

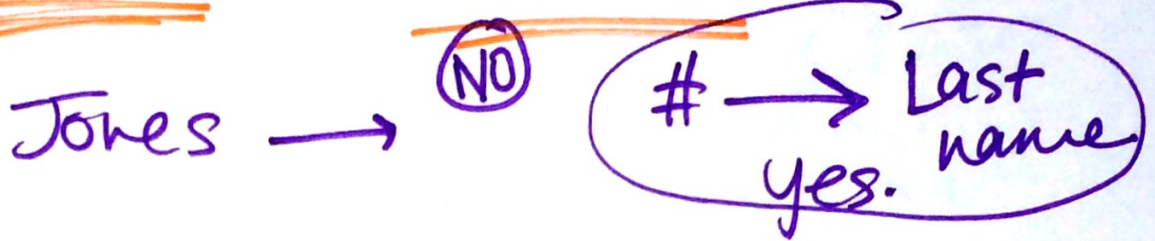
Domain (inputs x): 3, 5, 7
Range (output y): 5, 7

YES

NO

Notes 2-1

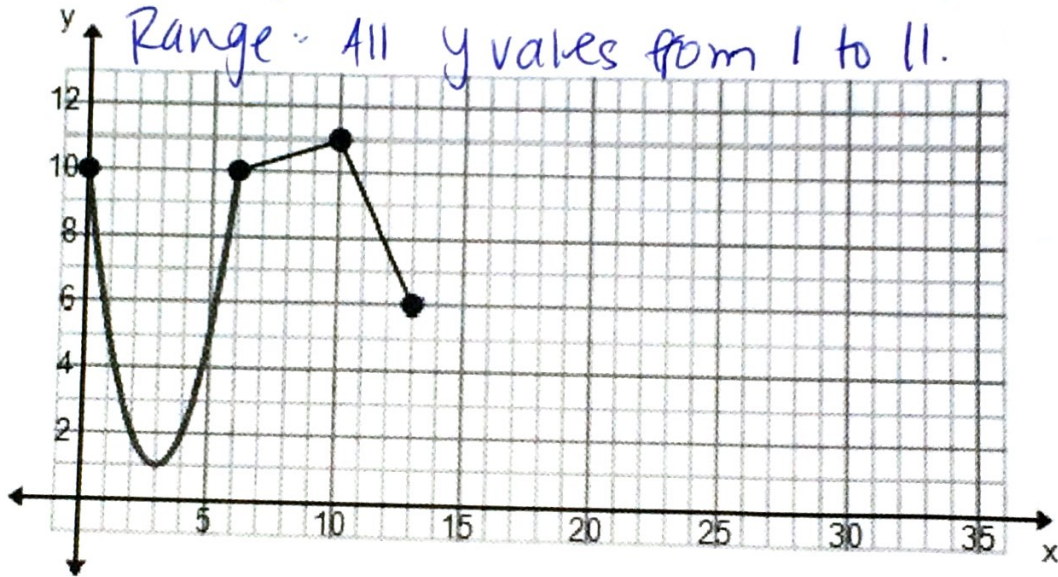
Ex. 4: A person's last name to Social Security number.



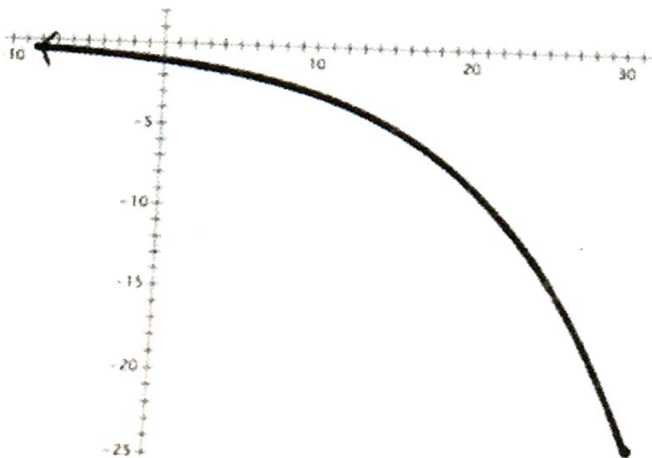
Use a sentence to describe the domain and range of each function.

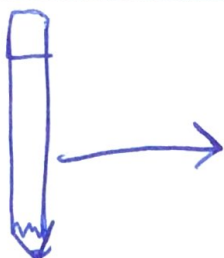
Domain: All x values from 0 to 13.
Range: All y values from 1 to 11.

Ex. 5:



Ex. 6:

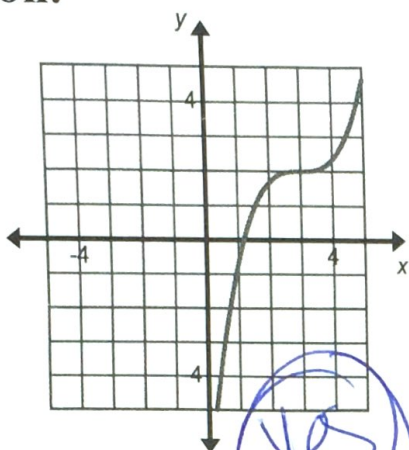


Vertical Line Test:

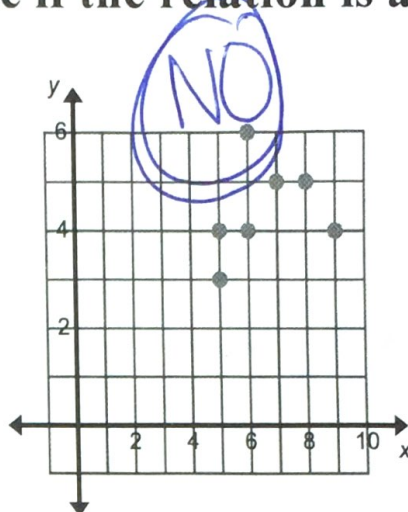
to pass:
Hit only 1 place
at a time.

Use the vertical line test to determine if the relation is a function.

Ex. 7:



Ex. 8:



f of x

If $f(x) = 3x - 8$ and $g(x) = x^2 + 5x$, find each value.

Ex. 9: $f(-4)$

$$f(-4) = 3(-4) - 8$$

$$-12 - 8$$

$$f(-4) = -20$$

Ex. 11: $f(c)$

$$f(c) = 3(c) - 8$$

$$f(c) = 3c - 8$$

Ex. 13: $7 + g(-2)$ Ex. 10: $g(-3)$

$$g(-3) = (-3)^2 + 5(-3)$$

$$= 9 + -15$$

$$g(-3) = -6$$

Ex. 12: $f(2) + g(3)$

$$(3(2) - 8) + ((3)^2 + 5(3))$$

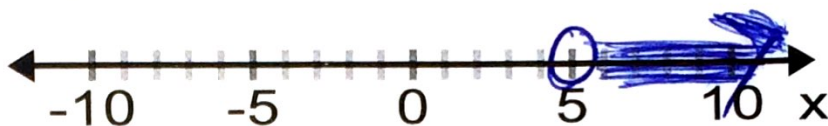
$$(6 - 8) + (9 + 15)$$

$$(-2) + (24)$$

$$f(2) + g(3) = 22$$

Graph the inequality on the given number line.

Ex. 14: $x > 5$

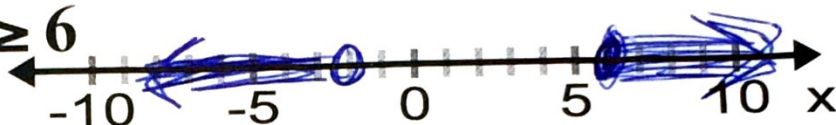


Open Dot

Ex. 15: $x \leq -3$



Ex. 16: $x < -2$ or $x \geq 6$



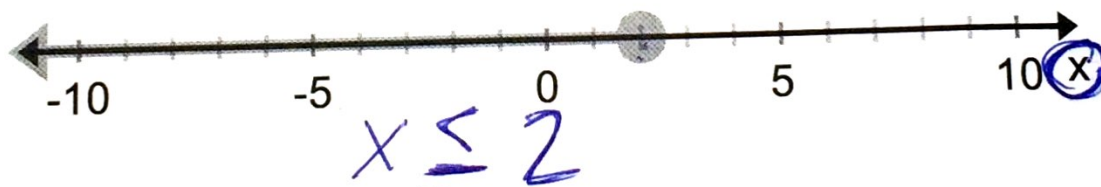
Ex. 17: $2 \leq x < 8$



SANDWICH

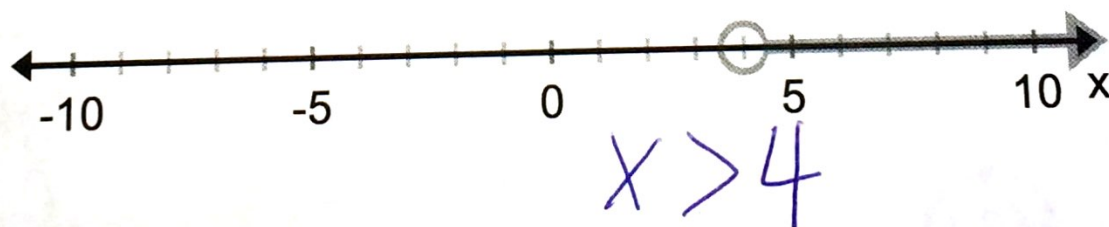
Write the inequality for the graph.

Ex. 16:



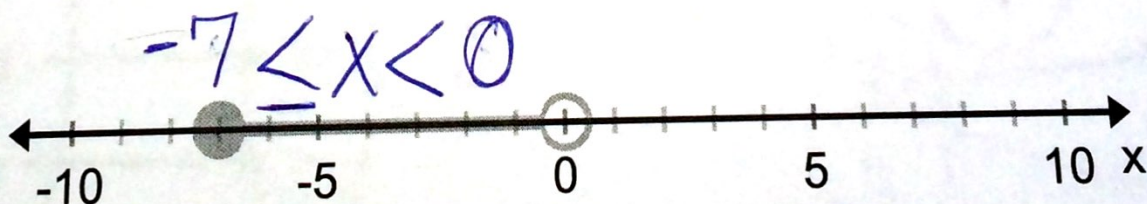
$x \leq 2$

Ex. 17:



$x > 4$

Ex. 18:



$-7 \leq x < 0$