Lesson FN – 1

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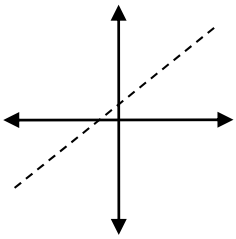
Objective: **Understanding Relations, Functions, and the Vertical Line Test**

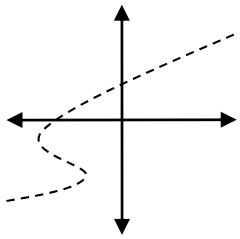
Homework FN1– NYA p.259 #1, 2, 5, 7, 10, 14, 22, 23, 26, 32 – 35

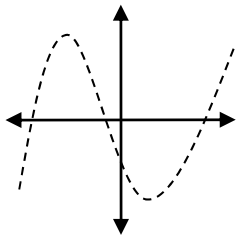
Do Now: Name the location of the point on the x-y plane.

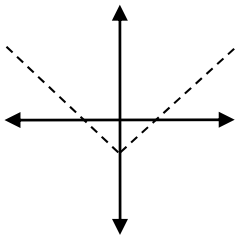
1. (3, –2)	2. (0, 0)	3. (–1, 9)	4. (4, –5)	5. (4, 0)

Exam Prep: Which of the following is not a function? Why?

A) 

B) 

C) 

D) 

Functions help you interpret Algebra. This lesson introduces a few definitions and ways of discussing input and output.

Recognizing a function based on input and output will also be covered.

Relation – Any set of coordinate pairs; a set of inputs and outputs.

Function – A relation that connects each input value to exactly one output value.

★Therefore, a function has only one y-value for each x-value.

Determine if the Following Relation is a Function

Coordinate Form

(4, 21) (3, 14) (2, 9) (1, 6) (0, 5) (–1, 6)	(4, 8) (15, 16) (23, 42) (0, 0) (4, –8)
Function? YES or NO	Function? YES or NO

Essential Question: What are you looking for in the coordinate list?

Domain – Set of all possible input values of a function.

Range – Set of all possible output values of a function.

Table Form

x	y
–2	–1
0	3
2	7
4	11
6	15

Function?

YES or NO

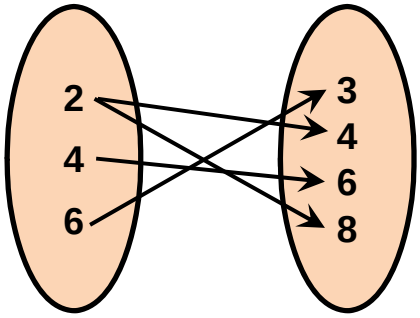
x	y
2	–4
1	–1
0	0
1	1
2	4

Function?

YES or NO

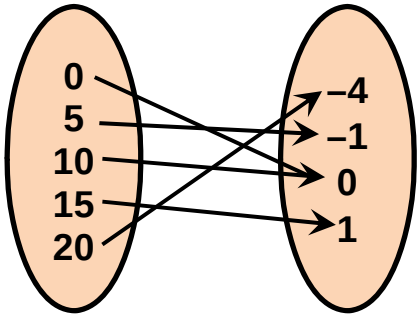
Mapping Diagrams

Make a table from the mapping diagram. Tell if the relation represents a function.



Function: Yes or No

x	y



Function: Yes or No

x	y

Make a mapping diagram from the table. Tell if the relation represents a function.

Input Output

x	y
10	–8
12	–8
14	–8
16	–8

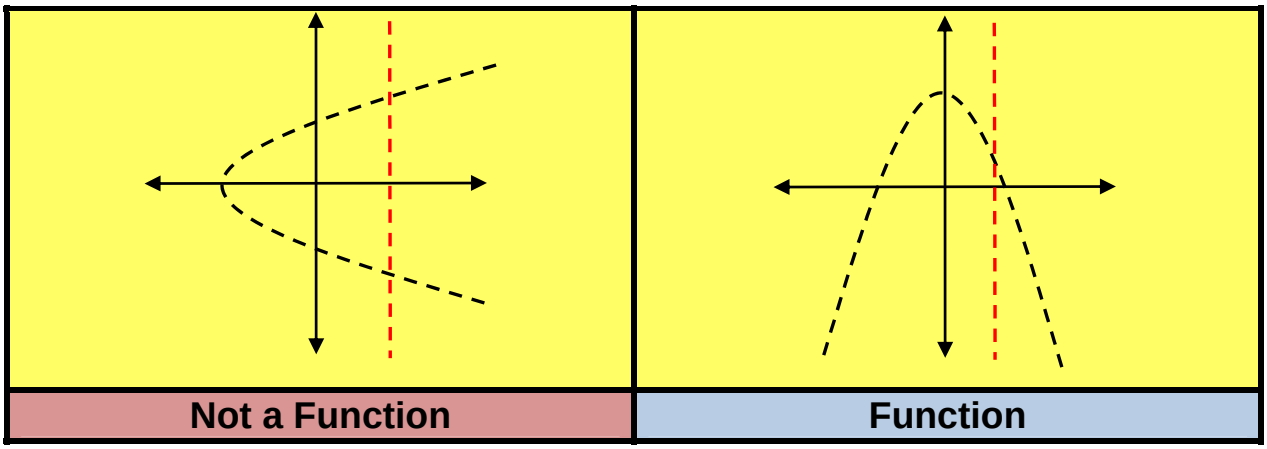
Function: Yes or No

Input Output

x	y
2	2
1	4
0	6
1	8
2	10

Function: Yes or No

<u>Vertical-Line Test</u> – If a vertical line passes through a graph more than once, the graph is not a graph of a function.



Practice: Function or Not?