

## 2.10 Evaluating Representations of Functions

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Standard:

F.IF.2

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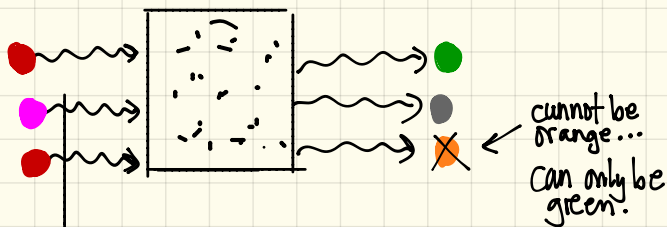
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# Old Functions

Let's remember...

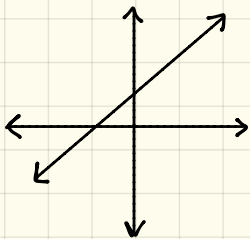
A Function is a rule that relates an input to only one corresponding output.



# New Representations of Functions

There are many different representations that we can use to represent functions such as ...

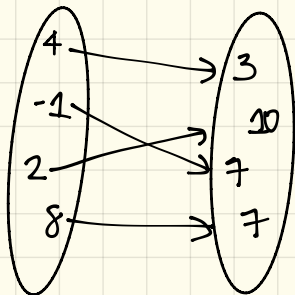
## ① Graphing



## ② Tables

x	y
2	0
5	6
-10	2
4	-3

## ③ Mapping



## ④ Set $\{(6,1), (5,8), (3,2), (0,0)\}$

## ⑤ Algebra $f(x) = 5x + 6$

Think about  $f(x)$  as  $y$ .

# GOAL

Is to determine (when given any of these representations) whether or NOT it is a representation of a function.

How do we know if a representation fails to be a function?  
If the representation's input has more than one corresponding output, it is not a function.

[Example 1] Which of these is a function. If it is not a function, explain why.

①

x	y
6	5
8	2
-6	8
0	9

Ans: Function

②

x	y
2	3
-7	-8
2	5
6	10
5	9

Ans: Not a function

The x-value 2 has 2 different outputs.

③

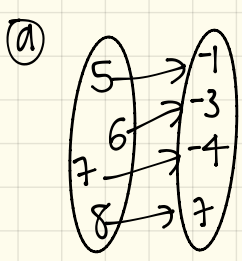
x	y
-1	5
2	5
5	5
8	5

Ans: Function

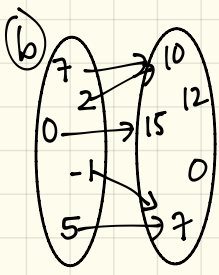
[Example 2] Which of the following relations is a function & which is NOT a function?

- (a)  $\{(5,8), (4,2), (5,11), (-1,0), (7,2)\}$  Not a function The x-value 5 has 2 different outputs
- (b)  $\{(2,3), (-1,0), (0,0), (2,3)\}$  Function

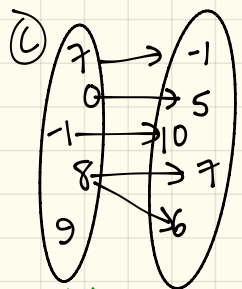
[Example 3] Which mappings are a functions & which is NOT a function?



Function



Function



Not a Function  
The x-value 8 has two outputs.

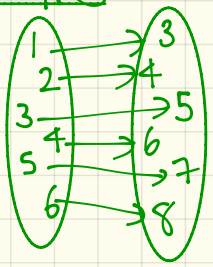
[Example 4] Use the set to create a table of values, mapping diagram, & graph.

$$\{(1,3), (2,4), (3,5), (4,6), (5,7), (6,8)\}$$

Table

x	y
1	3
2	4
3	5
4	6
5	7
6	8

Mapping



Graph

