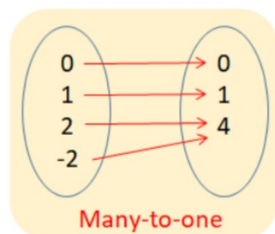
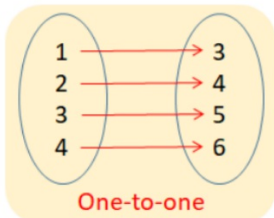

Functions - Day 7

Relations & Functions

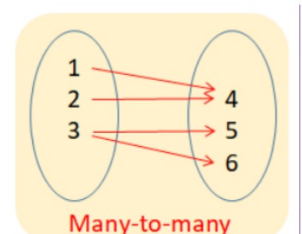
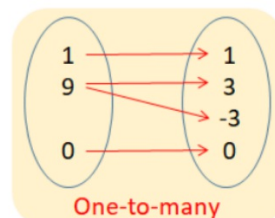
Relation: pairing of two sets of numbers

Function: a relation where every input has exactly one output

Function



NOT a Function



Tell whether the relation is a function. Explain!

A: $\{(2, 5), (7, 9), (3, 9), (5, 8)\}$

B: $\{(3, 5), (2, 5), (5, 8), (3, 1)\}$

C: $\{(5, 1), (4, 1), (3, 1), (2, 1)\}$

Tell whether the relation is a function. Explain!

A: $\{(2, 5), (7, 9), (3, 9), (5, 8)\}$

Yes - every input has exactly one output

B: $\{(3, 5), (2, 5), (5, 8), (3, 1)\}$

No - input of 3 has two different outputs

C: $\{(5, 1), (4, 1), (3, 1), (2, 1)\}$

Yes - every input has exactly one output

Tell whether the relation is a function. Explain!

D:	x	y
	-2	-8
	4	-11
	-4	-2
	2	1
	0	0

E:	x	y
	3	1
	5	2
	7	3
	7	4
	9	5

F:	x	y
	2	5
	2	0
	2	-8
	2	2
	2	-5

Tell whether the relation is a function. Explain!

D: x	y
-2	-8
4	-11
-4	-2
2	1
0	0

Yes - every input has exactly one output

E: x	y
3	1
5	2
7	3
7	4
9	5

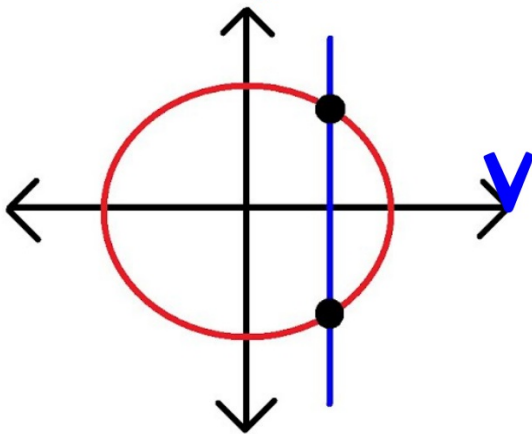
No - input of 7 has two different outputs

F: x	y
2	5
2	0
2	-8
2	2
2	-5

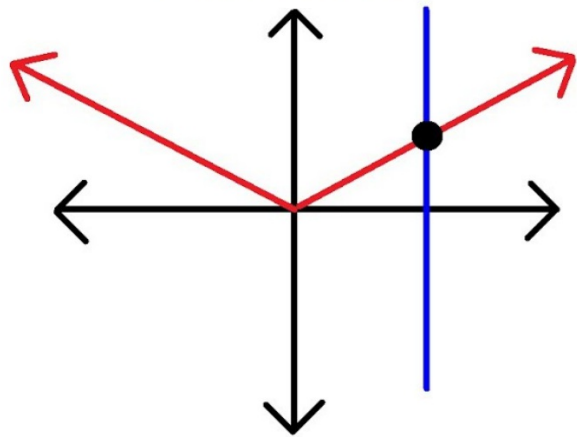
No - input of 2 has five different outputs

Vertical Line Test

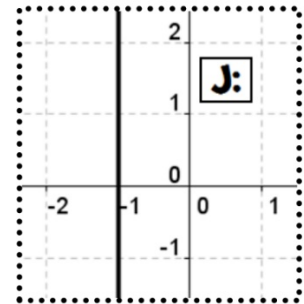
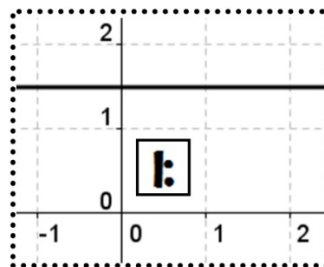
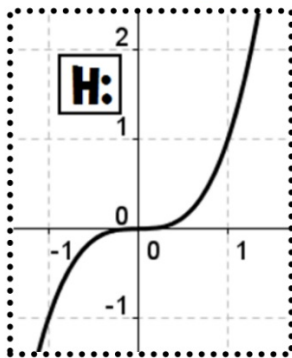
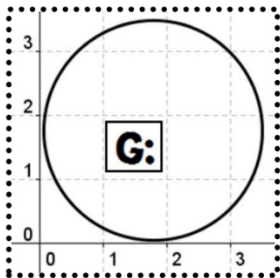
NOT a function



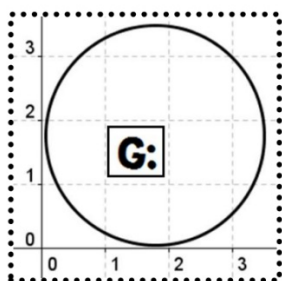
Function



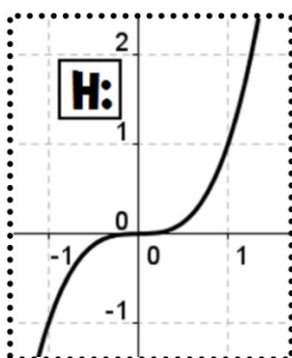
Tell whether the graph is a function. Explain!



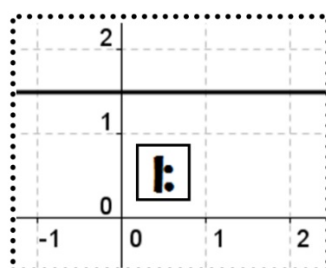
Tell whether the graph is a function. Explain!



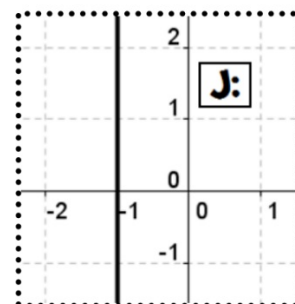
No - vertical line goes through multiple points



Yes - any vertical line will go through only one point



Yes - any vertical line will go through only one point



No - vertical line goes through multiple points

Function

Not a Function

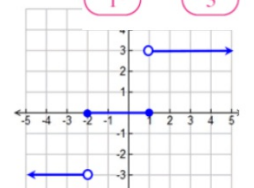
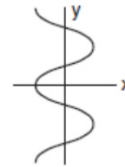
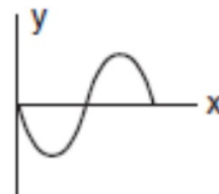
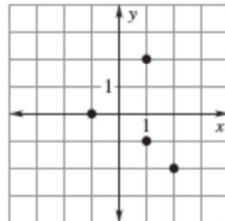
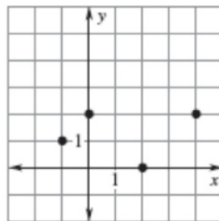
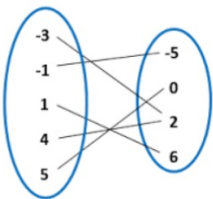
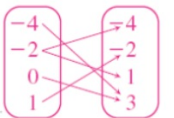
x	2	1	0
y	2	-2	2

$\{(0,1), (0,2), (0,3)\}$

x	3	4	3
y	1	3	2

$\{(4, 0), (3,0), (2,0), (1,0)\}$

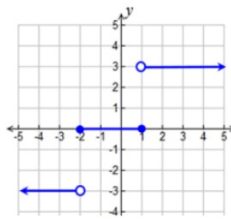
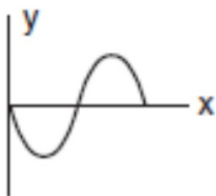
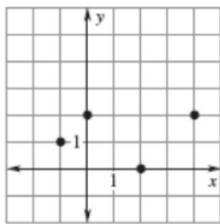
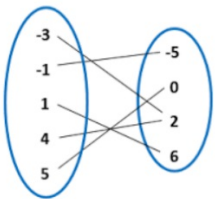
Input Output



Function

x	2	1	0
y	2	-2	2

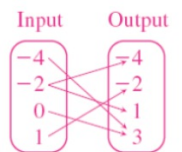
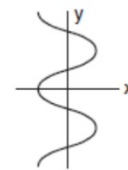
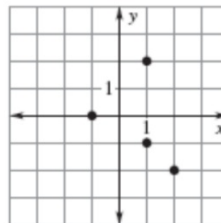
$\{(4, 0), (3, 0), (2, 0), (1, 0)\}$



Not a Function

$\{(0, 1), (0, 2), (0, 3)\}$

x	3	4	3
y	1	3	2



Homework:

**Function or Not a Function?
Worksheet**