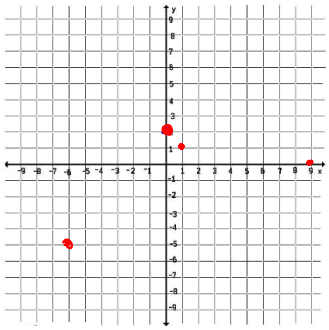
Do Now: Graph the ordered pairs in the same coordinate plane.

1. (0, 2)
2. (-6, -5)
3. (1, 1)
4. (9, 0)

(x, y)



8.1 Relations and Functions

8.F

- SWBAT use graphs to represent relations and functions.
- SWBAT create representations to communicate mathematical ideas.

Calculators: No

A relation is a relationship of two numbers using an ordered pair.

domain- the set of all inputs (or x-coordinates)

range- the set of all outputs (or y-coordinates)

The table below shows the ages and lengths of alligators.

Not a function

X

Age (years)	2	4	5	5	7
Length (in.)	32	59	65	~~69~~ 32	96

Y

Domain: 2, 4, 5, 5, 7

Range: 32, 59, 65, 69, 96

The table below shows the number of miles traveled after different numbers of hours driving.

Function

X

Hours	1	2	3	4	5
Miles	60	100	160	210	270

Y

(1, 60) (2, 100) (3, 160) (4, 210) (5, 270)

Domain:

Range:

Representing Relations

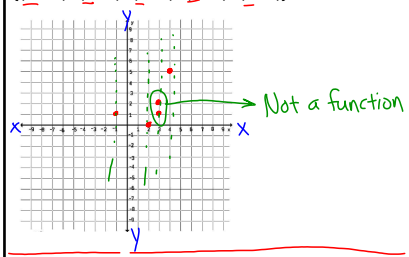
- A graph
- A mapping diagram
  - -List the inputs and outputs in order.
  - -Draw arrows from the inputs to their outputs.

A relation is a function if for each input (x-coordinate) there is **exactly** one output (y-coordinate).

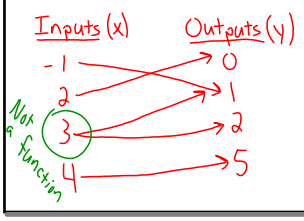
Vertical Line Test

- If you can find a vertical line passing through more than one point of the graph, then the relation is *not* a function.

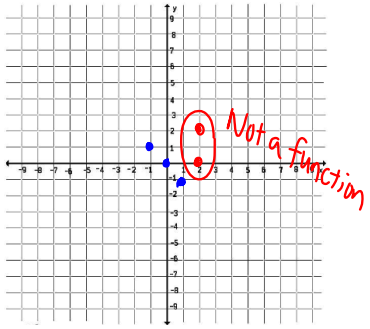
Represent the relation using as a graph and as a mapping diagram. Then tell whether the relation is a function.
{(-1, 1), (2, 0), (3, 1), (3, 2), (4, 5)}



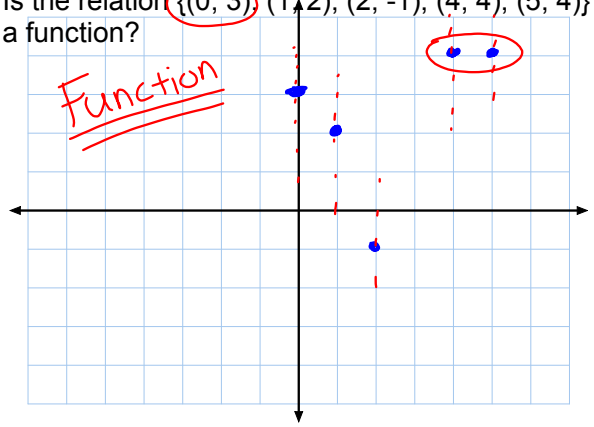
Mapping Diagram



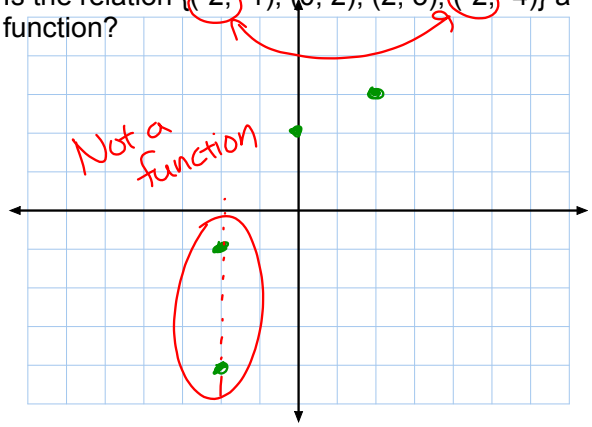
Represent the relation using as a graph and as a mapping diagram. Then tell whether the relation is a function.
{(2, 0), (1, -1), (2, 2), (0, 0), (-1, 1)}



Is the relation {(0, 3), (1, 2), (2, -1), (4, 4), (5, 4)} a function?



Is the relation {(-2, -1), (0, 2), (2, 3), (-2, -4)} a function?



Exit Pass 8.1

Describe and correct the error in the given statement.

Function

The relation (1, -5), (2, -5), (3, 6), (4, 11) is not a function because the inputs 1 and 2 are both paired with the output -5.

"Don't blame the sea if you cannot catch a fish."

Working individually or with a partner, complete the workbook.

Workbook pg.

Reflection of Today's Lesson

8.1 Relations and Functions

8.F

- SWBAT use graphs to represent relations and functions.
- SWBAT create representations to communicate mathematica ideas.

Calculators: No

Homework

pg. 388 #8-21

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#8-12