

Content and Language Objective:

Students will develop a deeper understanding of what a function is by working through an investigation in pairs and discussing with their partners what they discover.

Warm - Up

COPY the tables so you can study/review

What is the domain and range of each function and how do you know each one is a function?

Input	Output
1	4
2	3
3	4
4	3

D: $\{1, 2, 3, 4\}$
R: $\{3, 4\}$

Input	1	2	3	4	5	6
Output	0	0	0	0	0	0

D: $\{1, 2, 3, 4, 5, 6\}$
R: $\{0\}$

Content and Language Objective:

Students will develop a deeper understanding of what a function is by working through an investigation in pairs and discussing with their partners what they discover.

Each table represents a relation. Based on the tables, which relations are functions and which are not? Give reasons for your answers.

Table 1

Input x	Output y
-2	-3
-1	-1
0	1
1	3
2	5
3	7
4	9

Table 2

Input x	Output y
4	-2
1	-1
0	0
1	1
4	2
9	3
16	4

Table 3

Input x	Output y
-2	0.44
-1	0.67
0	1
1	1.5
2	2.25
3	3.37
4	5.06

Table 4

Input x	Output y
-2	-3
-1	-5
1	-1
1	-3
2	-10
3	-2
3	-8

In your reasoning make sure you use the following vocabulary:

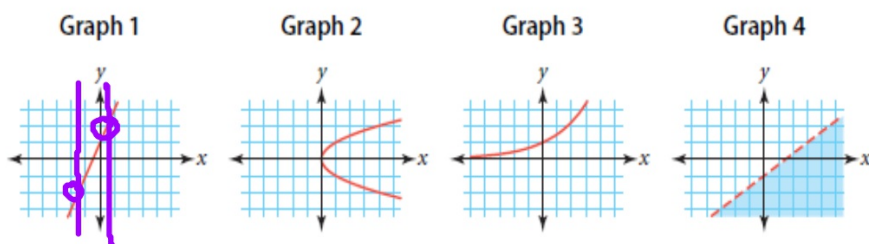
- Functions
- Tables
- Input
- Output
- Domain
- Range

Write down your reasoning for each table and find the domain and range

Content and Language Objective:

Students will develop a deeper understanding of what a function is by working through an investigation in pairs and discussing with their partners what they discover.

Each graph below represents a relation. Move a vertical line, such as the edge of a ruler, from side to side on the graph. Based on the graph and your vertical line, which relations are functions and which are not? Give reasons for your answers.



In your reasoning make sure you use the following vocabulary:

- Functions
- Tables
- Input
- Output
- Domain
- Range
- Vertical Line Test
- Relation

Write your reasoning.

The vertical line only intersects the graph at one point at any given time.

Content and Language Objective:

Students will develop a deeper understanding of what a function is by working through an investigation in pairs and discussing with their partners what they discover.

Write a rule for what you discovered with the vertical line.

The vertical line can only intersect a graph at one point on a graph at any given time which makes the graph a function. If the vertical line intersects the graph more than once it is not a function.

