Section 2.1 – Relations and Functions   Name_____

Find the definition in your textbook.

RELATION:

Representations of a relation:

Notice that the chart below shows the same relation in three different ways. Now it's your turn. In the second column, make a mapping diagram and graph for the ordered pairs $\{(0, -3), (2, 5), (2, 4), (3, -3)\}$.

	Example	Your turn
Ordered Pairs	$\{(0, -2), (0, 1), (1, 2), (2, 1), (3, 4)\}$	$\{(0, -3), (2, 5), (2, 4), (3, -3)\}$
Mapping Diagram		
Graph		

Find the definitions in your textbook.

DOMAIN:	RANGE:

Example: Find the domain and range of the relation in the above example.

     The domain is $\{0, 1, 2, 3\}$.

     The range is $\{-2, 1, 2, 4\}$.

Your turn. Find the domain and range of the relation in the second column above.

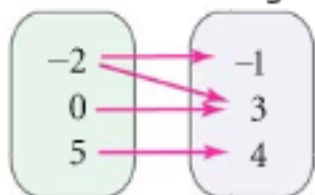   The domain is _____

     The range is _____

Find the definition in your textbook.

FUNCTION:

Another way of defining a function is "a relation in which each input has EXACTLY one output".
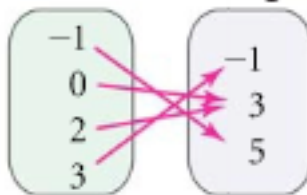
Example: Determine whether the relation represents a function.

a.

This **is not** a function. The input -2 has two outputs.

b.

This **is** a function. Each input has exactly one output.

c. {(-6, 2), (-4, 5), (-1, -7), (-4, 8)}

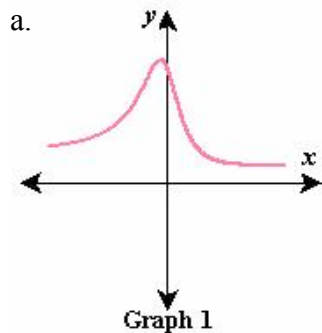This **is not** a function. Notice that the input -4 has two outputs, 5 and 8.

d. {(1, 6), (2, 6), (3, 6), (4, 6), (5, 6), (6, 6)}

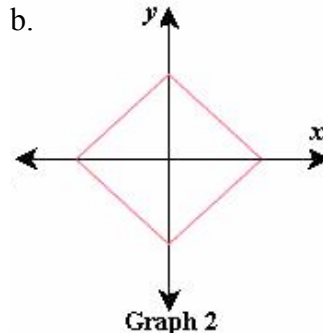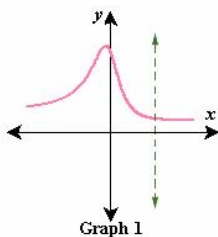This **is** a function. Each input has exactly one output. It is ok that the outputs are all the same!

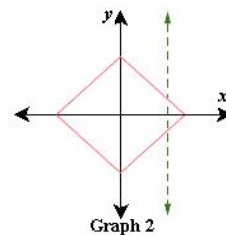Find the definition in your textbook.

VERTICAL LINE TEST:

Example: Determine whether the relation represents a function.

a.

Graph 1

This **is** a function because every vertical line drawn passes through only one point on the graph.

b.

Graph 2

This **is not** a function because at least one vertical line drawn passes through two points on the graph.

Your assignment: pg. 59 #5, 12, 13, 16, 17, 18, 19, 20, 21