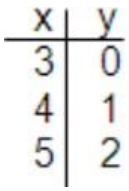
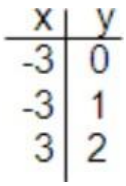
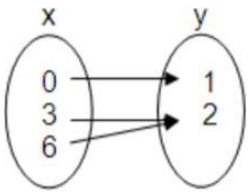
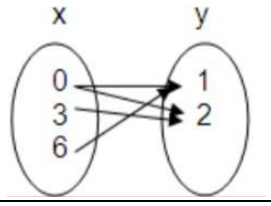
1.1 Functions

- Recall: x is the independent variable; y is the dependent variable.
- A **relation** is any mathematical statement relating 2 variables.
- A **function** is a relation that produces only **one** output value for each input variable.
- Functions and relations can be described in a variety of ways and can be represented graphically, numerically, or algebraically.
- **Vertical Line Test** – a relation is not a function if a vertical line on the graph touches the relation in more than once place.

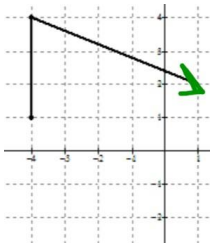
Functions and relations can take on many forms. Examine the different examples below and determine which ones are functions – include a written explanation. State the domain and range of the function in set notation. At the end, go back to each function, and determine *f(3)*.

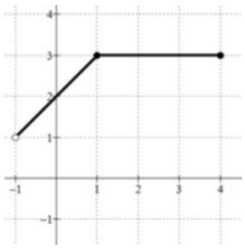
Description	Function/relation	Function? yes/no	Explanation	Domain	Range
Set of ordered pairs	{(3,2), (3, 4), (4, 2)}				
	{(1,2), (5,4), (3,4)}				

Description	Function/relation	Function? yes/no	Explanation	Domain	Range
Table					
					

Description	Function/relation	Function? yes/no	Explanation	Domain	Range
Arrow/ Mapping Diagram					
					

Description	Function/relation	Function? yes/no	Explanation	Domain	Range
Equation	$y^2 = x + 3$				
	$x^2 = 3y + 4$				

Description	Function/relation	Function? yes/no	Explanation	Domain	Range
					

Graph					

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