Goal: I will be able to _____

_____

Tool Bag

Formulas, equations, vocabulary, etc.

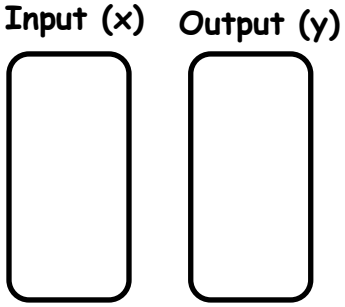
Here's How…Notes & Examples

Relation

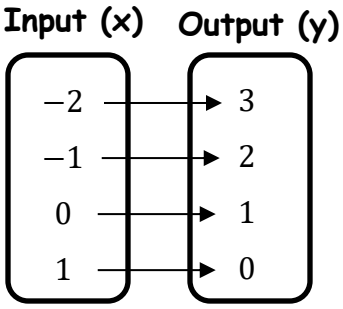
a set of points. $\{(0,1),(2,4),(5,8),(9,2)\}$

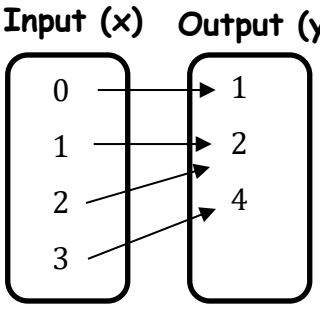
Format: (x, y) (Input, Output)

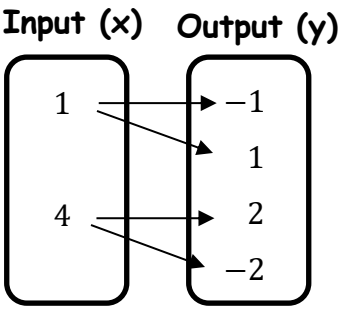
Mapping Diagram



Write the ordered pairs that correspond to the following mapping diagrams

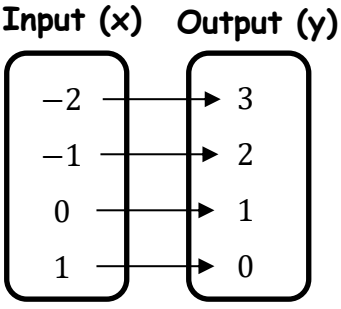


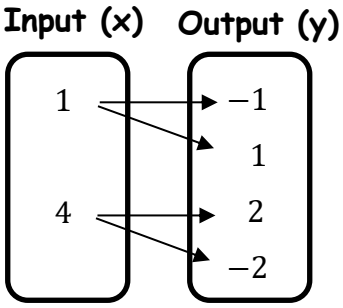




Function

each input can have only one output.





You Try

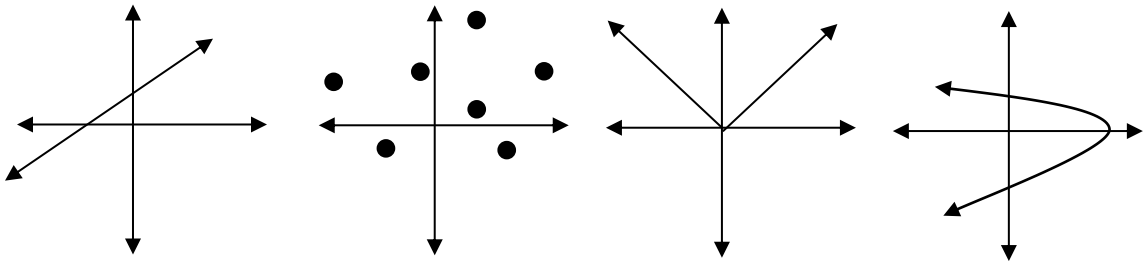
Given the following relations, which ones are functions?

1. $\{(0,1),(1,4),(2,5),(3,7)\}$ 2. $\{(-2,0),(-1,0),(0,0),(1,0)\}$ 3. $\{(0,-1),(0,3),(1,2),(3,2)\}$

Vertical Line Test

Use a vertical line on a graph to see if it is a function. If the vertical line passes through only 1 point, then it is a function.

Which of the following are functions, and which are not?



Different Ways to Represent a Function

Example

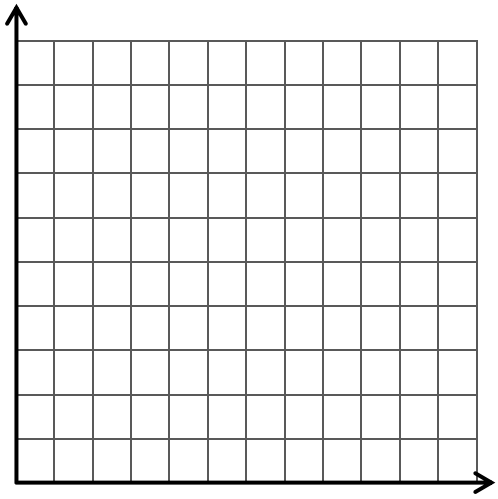
A car gets 28 miles per gallon. The distance is a **function** of the number of gallons of gas.

Ordered Pairs

Table of Values

Input, x (Number of gallons)	Output, y (Distance in miles)

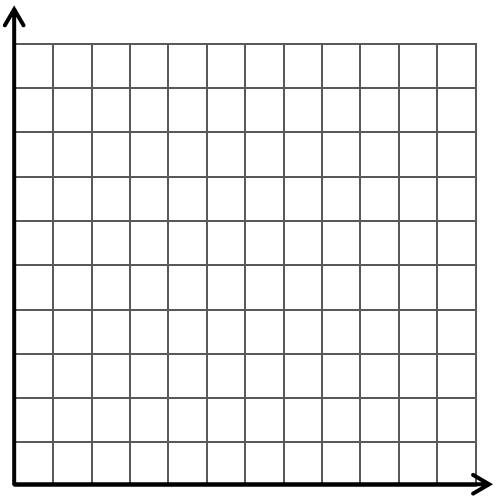
Graph



Rule (Formula/Equation)

We Try

In one hour of walking, you burn 257 calories. The total number of calories is a function of the number of hours you walked. Represent this function in 4 different ways.



You Try

You can make 2 dozen cookies with $\frac{1}{2}$ stick of butter. The number of cookies is a function of butter. Represent this function in 4 ways with butter as the input and cookies as the output.