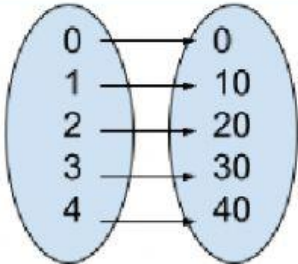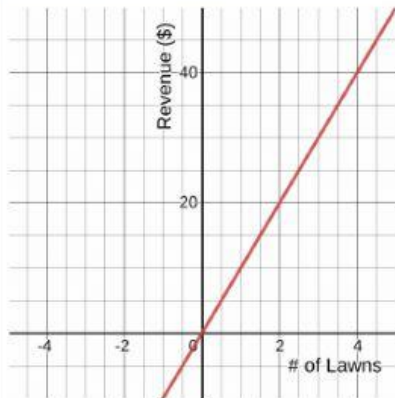# What is a Relation? What is a Function?
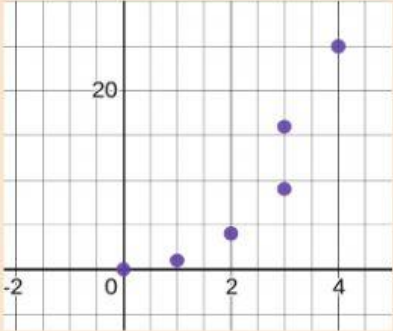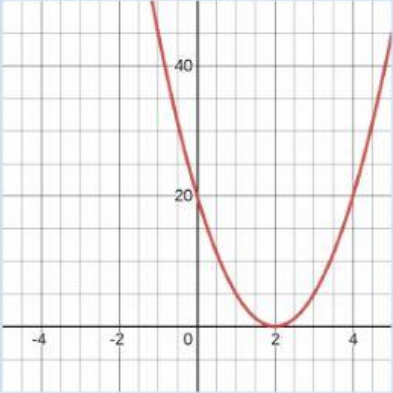
A **relation** is a rule that associates an x-value with y-value(s)

**Question 1:** Name the method of expression of the relation in the row above the examles

| | | | |
|---|---|---|---|
| {(0,0),(1,10),(2,20),(3,30)} | | y = 10x | |



| # of Lawns | Revenue ($) |
|---|---|
| 0 | 0 |
| 1 | 10 |
| 2 | 20 |
| 3 | 30 |



A **function** is a special type of relation in which every independent value (x-value) has **only one** dependent value (y-value).  In other words, a relation is a function when everytime we plug a value in for x we only get one y value
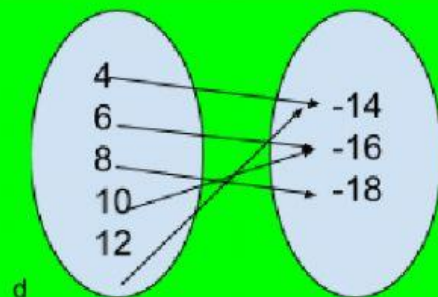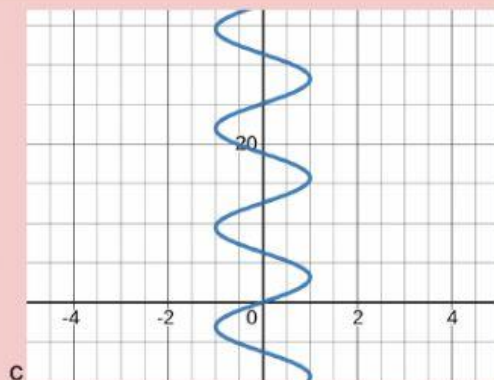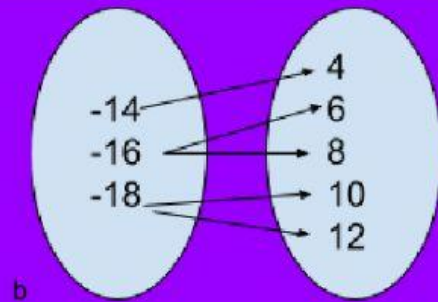
**Question 2:** Determine whether the following relations are functions:

| { (4,3),(5,6),(6,9),(7,12),(8,15)} | { (4,3),(4,6),(5,9),(5,12),(6,15)} |
|---|---|
| | |

**Question 3:** Determine whether each relation is a function or not?

| $x_1$ | 🍪 $y_1$ |
|---|---|
| 0 | 20 |
| 1 | 22 |
| 2 | 24 |
| 2 | 26 |

a

b

c

d

$$y = 30x - 10$$

$$\{(-2,4),(-1,1),(0,0),(1,1)(2,4)\}$$

g

| $x_1$ | 🍪 $y_1$ |
|---|---|
| 0 | 2 |
| 1 | 2 |
| 2 | 4 |
| 3 | 4 |

h