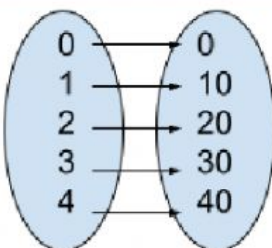
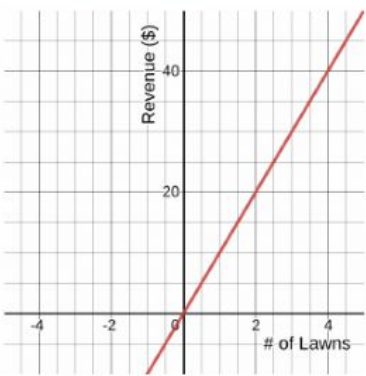


What is a Relation? What is a Function?

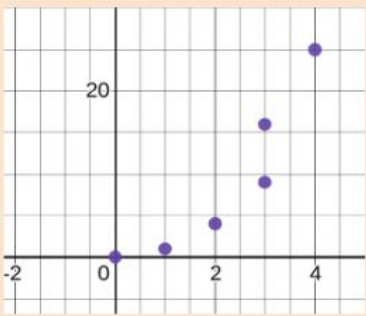
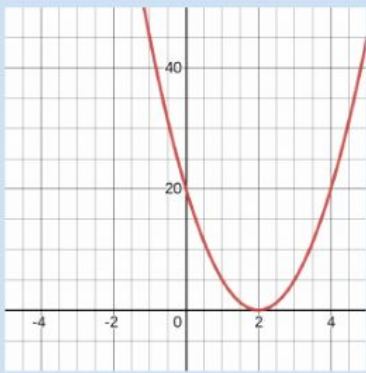
A **relation** is a rule that associates an x-value with y-value(s)

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



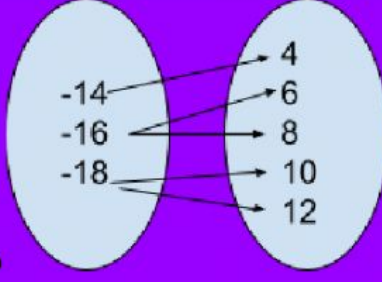

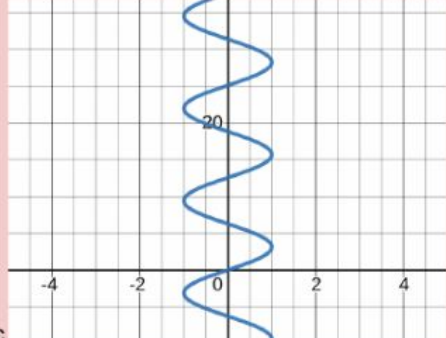
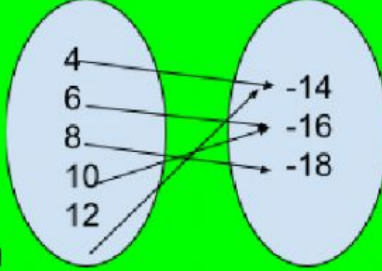
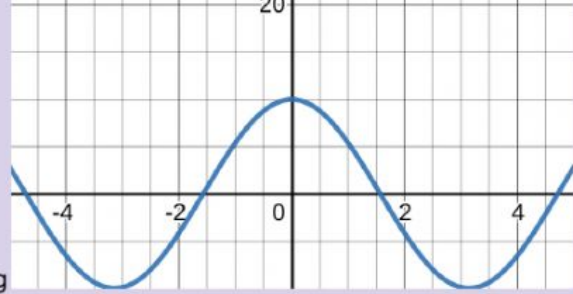



$\{(0,0),(1,10),(2,20),(3,30)\}$		$y = 10x$											
	<table><tr><th># of Lawns</th><th>Revenue (\$)</th></tr><tr><td>0</td><td>0</td></tr><tr><td>1</td><td>10</td></tr><tr><td>2</td><td>20</td></tr><tr><td>3</td><td>30</td></tr></table>	# of Lawns	Revenue (\$)	0	0	1	10	2	20	3	30		
# of Lawns	Revenue (\$)												
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?

<p>a</p> <table border="1"> <thead> <tr> <th>x_1</th> <th> y_1</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>20</td> </tr> <tr> <td>1</td> <td>22</td> </tr> <tr> <td>2</td> <td>24</td> </tr> <tr> <td>2</td> <td>26</td> </tr> </tbody> </table>	x_1	 y_1	0	20	1	22	2	24	2	26	<p>b</p> 
x_1	 y_1										
0	20										
1	22										
2	24										
2	26										
<p>c</p> 	<p>d</p> 										
<p>$y = 30x - 10$</p>	<p>$\{(-2,4),(-1,1),(0,0),(1,1)(2,4)\}$</p>										
<p>g</p> 	<p>h</p> <table border="1"> <thead> <tr> <th>x_1</th> <th> y_1</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>2</td> </tr> <tr> <td>1</td> <td>2</td> </tr> <tr> <td>2</td> <td>4</td> </tr> <tr> <td>3</td> <td>4</td> </tr> </tbody> </table>	x_1	 y_1	0	2	1	2	2	4	3	4
x_1	 y_1										
0	2										
1	2										
2	4										
3	4										