

Where do fish keep their money?

Factor: $2x^2 - 5x - 3$

Factor: $4x^2 - 9$

money?

Factor: $2x^2 - 5x - 3$

$$\begin{array}{l} \overset{-6}{+} \overset{-5}{-} \\ \underline{2x^2 - 6x + x - 3} \\ 2x(x-3) + 1(x-3) \\ (x-3)(2x+1) \end{array}$$

Factor:

$$\begin{array}{l} \text{Answ} \\ (2x)^2 - 3^2 \\ \begin{array}{l} x-36 \\ +0 \end{array} \\ 4x^2 - 9 \\ \underline{4x^2 + 0x - 9} \\ \underline{4x^2 - 6x + 6x - 9} \\ 2x(2x-3) + 3(2x-3) \\ (2x-3)(2x+3) \end{array}$$

$$(a)^2 - (b)^2 = (a-b)(a+b)$$

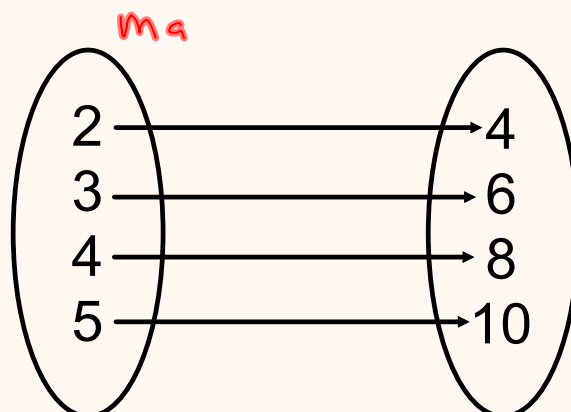
$$\begin{array}{l} x^2 - 4 = (x-2)(x+2) \\ x^2 - 16 = \end{array}$$

Functions

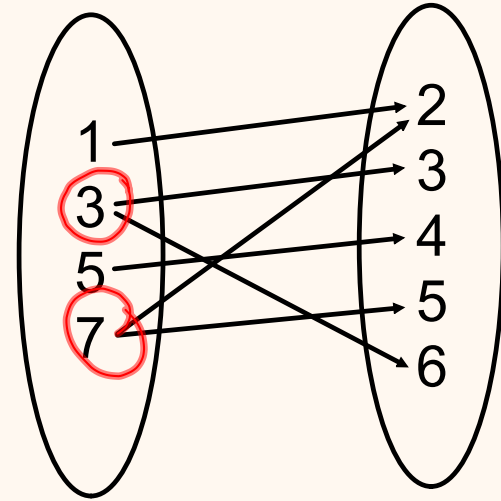
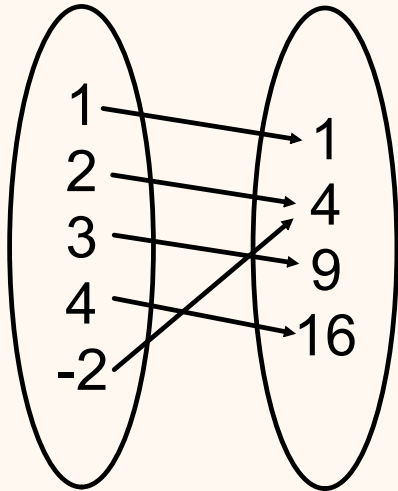
What is a Function?

A function is a relationship which maps an input value to exactly one output value.

The following is a mapping that shows an example of a function.

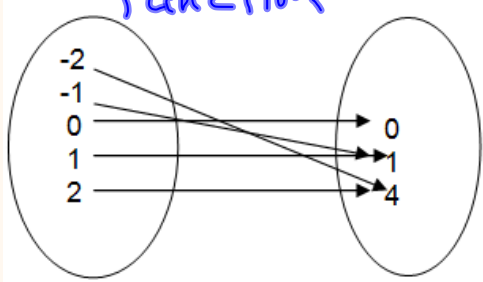


More Mappings

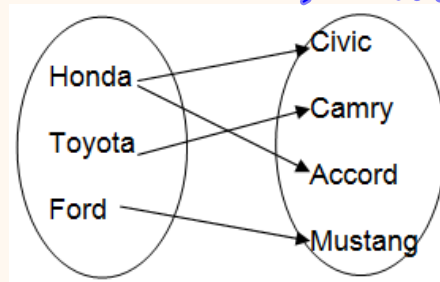


Mappings - Testers

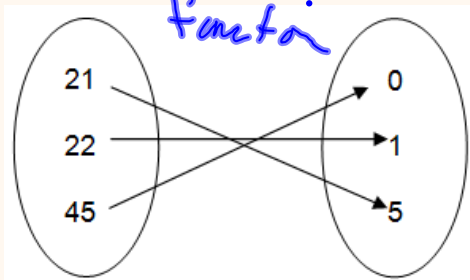
function



Not a function



function



function

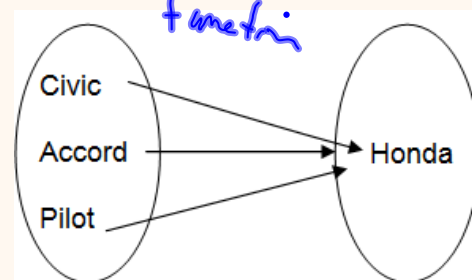
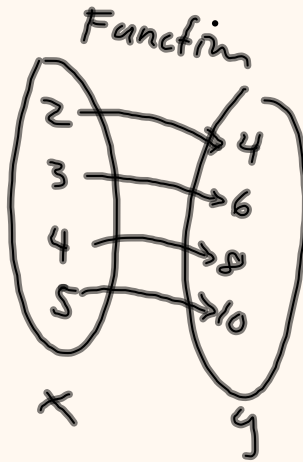


Table of Values

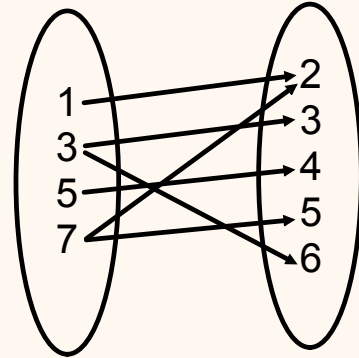
We often show relationships as a table of values.

x	y
2	4
3	6
4	8
5	10

Is this table showing a function?



Example



Tables - Testers

x	y
-2	3
-1	0
0	-1
1	0
2	3

function

x	y
1	9
2	8
2	7
4	6
4	5

Not a function

x	y
-1	5
0	5
1	5
2	5
3	5

function

Tables - Testers

x	y
21	1
22	0
45	5

x	y
21	0
21	1
22	5
45	0

Example 1

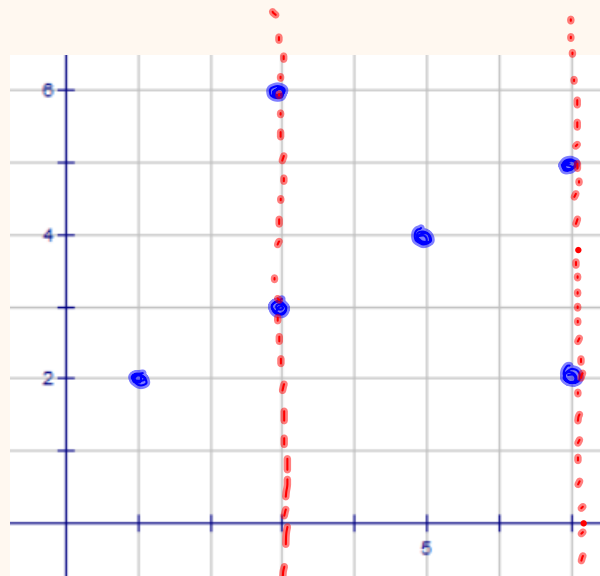
2	4
3	6
4	8
5	10

Graphs

From the table of values we can graph the relationships.

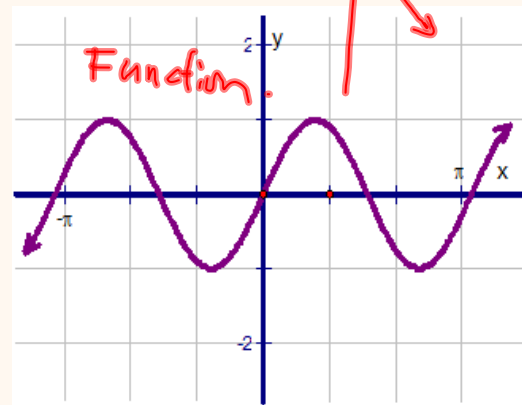
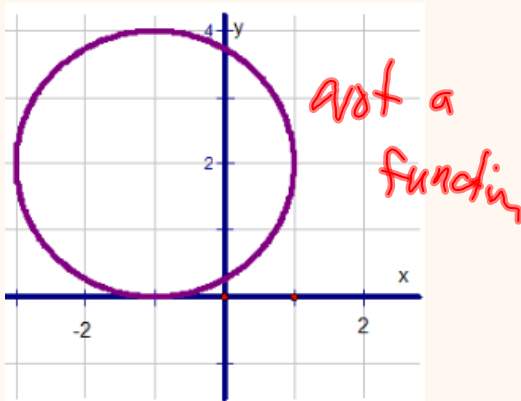
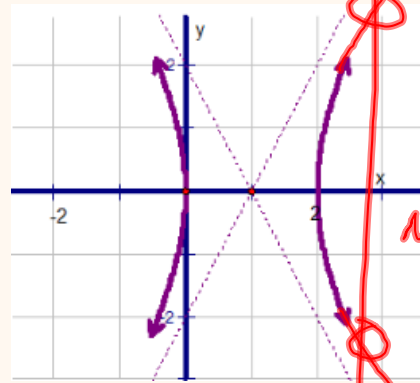
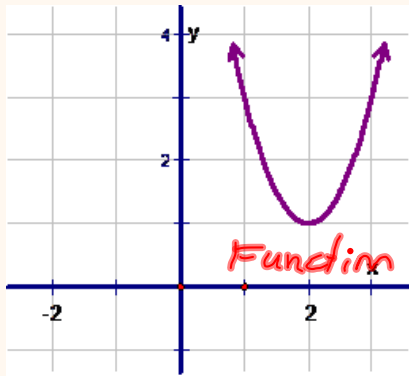
Example 2

x	y
1	2
3	3
3	6
5	4
7	2
7	5



v

Graphs - Testers



Homework

Handout