PreCalculus Review Lesson 2a

Relations & Functions

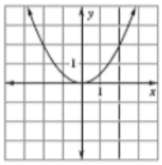
Relation: A pairing of input and output values..
Function: A relation in which there is exactly one output for each input. (x cannot repeat)

Domain: the set of input values (x-coordinates)
Range: the set of output values (y-coordinates)

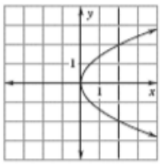
VERTICAL LINE TEST

A relation is a function if and only if no _____ line intersects the graph of the relation at more than _____.

Function



Not a function

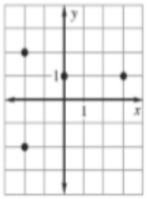


REPRESENTING RELATIONS

A relation can be represented in the following ways:

Ordered Pairs	Table	Graph	Mapping Diagram
(−2, 2)			
(−2, −2)			
(0, 1)			
(3, 1)			

x	y
−2	2
−2	−2
0	1
3	1



Function Notation:

f(x) or "*f* of x"

f is the notation for the function which associates the domain element x to the range element, *f(x)*

Implicit form: When the function is given as an equation in terms of x and y, such as: 2x + y = 6

Explicit form: when the function is given as y in terms of x, such as f(x) = 6 – 2x.

Example Determine if the equation is a function: $y^2 + 2x = 3$

Rule: If _____, then the relation is not a function.

PRACTICE

Determine whether each equation is a function.

1) $y = x^3$

2) $y = \sqrt{1-2x}$

3) $x + y^2 = 1$