Relations & Functions

Mrs. Gross

(x, y)
(domain, range)

A relation is a set of ordered pairs.

A function is a special relation where each domain has its own range.
(All the domains are unique.)

(2,3)
(4,6)
(4,7)
(5,8)

relation- Yes
function- NO!!

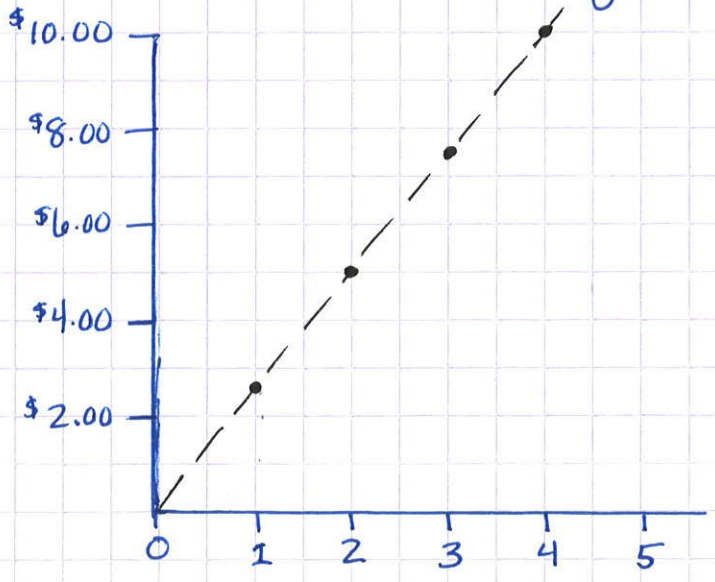
(2,6)
(3,7)
(4,8)
(5,8)

relation- YES
function- YES

Independent variable - the value that is chosen

Dependent variable - depends on what was chosen

Information: A dozen doughnuts cost $2.50

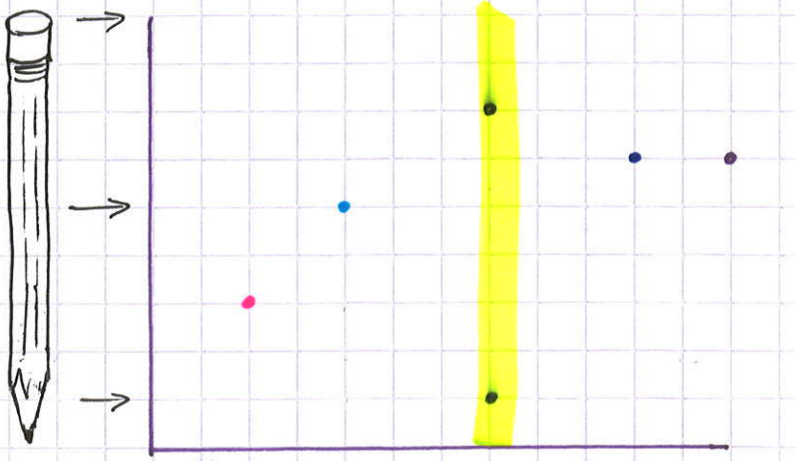


you choose x	cost y
1	$2.50
2	$5.00
3	$7.50
4	$10.00
5	?

Back of pg. 31

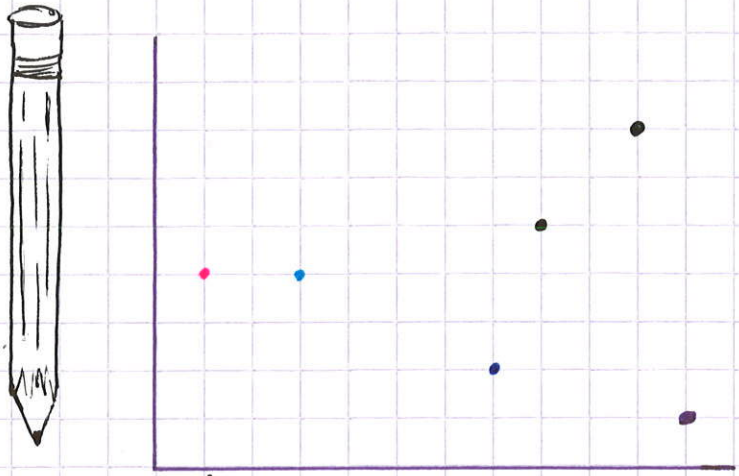
Vertical Line Test

(2,3)
(4,5)
(7,1)
(10,6)
(11,6)
(7,7)



This does NOT pass the vertical line test.

(1,4)
(3,4)
(7,2)
(8,5)
(10,7)
(11,1)



This does pass :)

Function notation - how to write a function as an equation

$f(x) = 4x - 7$ (replace the x with the number requested)

$f(x) = 4x - 7$
$f(5) = 4 \cdot 5 - 7$
$= 13$

$f(x) = 4x - 7$
$f(-6) = 4 \cdot -6 - 7$
$= -31$