Review Lesson 2: Unit 2- Introduction to Quadratic Functions part 1 Name:

1. Define a function in your own words and think on how is it different from a relation?
2. For each of the following relations, state whether it is a function or not. If it isn't a function, state why not. Also, state the domain and range for each relation.

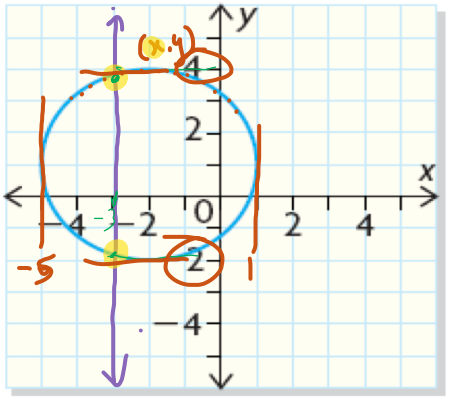
a) $\{(2,5),(4,8),(5,9),(4,2),(8,10)\}$

No, not a function bcz 4 has 2 outputs 8 and 2

$D=\{2,4,5,8\}$

$R=\{5,8,9,2,10\}$

b)



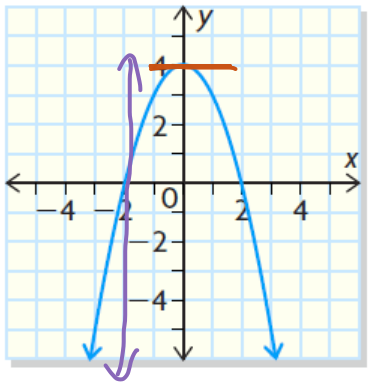
V.L.T.

No, not a function bcz it fails V.L.T.

$D=\{x\in R \mid -5\le x\le 1\}$

$R=\{y\in R \mid -2\le y\le 4\}$

c

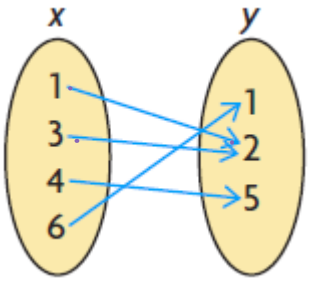


Yes, it is a function bcz it passes V.L.T.

$D:\{x\in R\}$

$R=\{f(x)\in R \mid f(x)\le 4\}$

d)

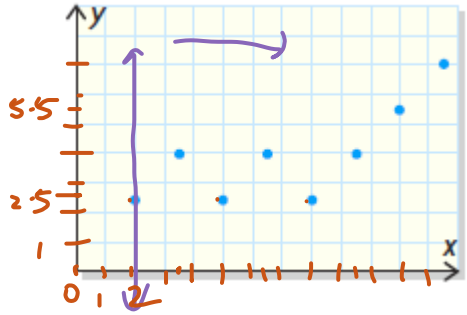


Yes, it is a function bcz each x has only one y.

$D=[1,3,4,6]$

$R=[1,2,5]$

e)



Yes, it is a function bcz passes V.L.T.

$D=\{2,3.5,5,6.5,8,9.5,11,12.5\}$

$R=\{2.5,4,5.5,7\}$

3. Evaluate $f(4)$ for each of the following:

a) $f = \{(1, 5), (3, 2), (4, 1), (6, 2)\}$

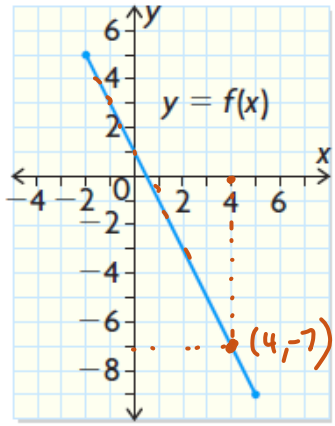
$f(4) = 1$

b)

x	2	4	6	8
f(x)	4	8	12	16

$f(4) = 8$

c)



$f(4) = -7$

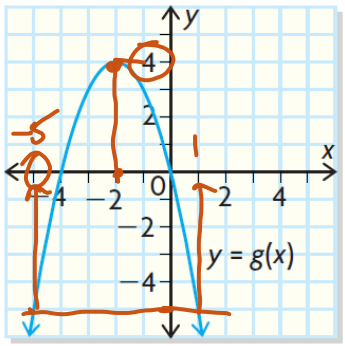
d) $f(x) = 3x^2 - 2x + 1$

$f(4) = 3(4)^2 - 2(4) + 1$

$= 48 - 8 + 1$

$= 41$

4. The graph of *g(x)* is shown below.



a) Evaluate $g(-2) = 4$

b) Determine *x* if $g(x) = -5$

$x_1 = -5$, $x_2 = 1$

5. Let $f(x) = 3x + 5$ and $g(x) = -2x^2 - 3x + 8$.

a) Evaluate $f(2)$

$f(2) = 3(2) + 5 = 6 + 5 = 11$

b) Find *x* so that $f(x) = -7$

$f(x) = 3x + 5$

$-7 = 3x + 5$

$-7 - 5 = 3x$

$\frac{-12}{3} = \frac{3x}{3}$

$-4 = x$

c) Evaluate $g(-3)$

$g(-3) = -2(-3)^2 - 3(-3) + 8$

$= -18 + 9 + 8$

$= -1$

d) Evaluate $f(2) - g(-3)$

$= (11) - (-1)$

$= 11 + 1$

$= 12$