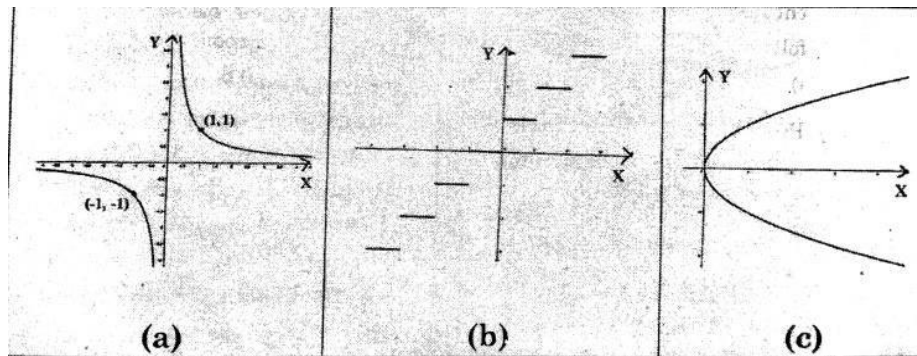


CHAPTER 2 - RELATIONS & FUNCTIONS

Focus Area Based Questions

- 1 . a) If f is a signum function, then Consider a real valued function
 $f(100) = \dots\dots\dots$
- b) Let $f = \{(1,1), (2,3), (0,-1), (-1,-3)\}$ be a function from Z to Z
 defined by $f(x) = ax + b$, for some integers a and b .
 Determine a and b .

2. Consider the following graphs :



- a) Which graph doesnot represent a function?
 b) Identify the function $f(x) = \frac{1}{x}$ from the above graph.
3. a) $A = \{2,3\}$, $B = \{1,3,5\}$ then the number of relations from A to B is

- b) R is a relation defined on the set $A = \{1, 2, 3, \dots, 14\}$ by
 $R = \{(x, y) : 3x - y = 0, xy \in A\}$
 Write the domain, co-domain and the range.
4. Write the relation $R = \{(x, x^3) : x \text{ is a prime number } < 10\}$, in roster form.

5. Let $A = \{1,2,3,4\}$, $B = \{1,5,9,11,15,16\}$ and $f = \{(1,5), (2,9), (3,1), (4,5), (2,1)\}$. State with the reason whether f is a relation or a function.

6. Consider the function $f : R \rightarrow R$ defined by $f(x) = -|x|$.

- a) Find the domain and range of f .
- b) Draw the graph of f .

7. a) Let $A = \{7,8\}$ and $B = \{5,4,2\}$, Find $A \times B$

b) Determine the domain and range of the relation R defined by

$$R = \{(x, y) : y = x + 1, x \in \{0,1,2,3,4,5\}\}$$

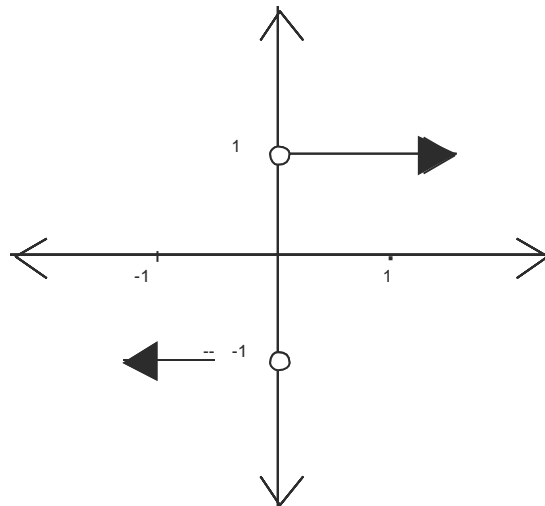
8. a) Let $A = \{1, 2\}$, $B = \{3, 4\}$. Choose the number of relations from A to B from the bracket:

(4,16,32,64)

b) Determine the domain and range of the relation R , where

$$R = \{(x, x^3) : x \text{ is a prime number less than } 15\}$$

c) From the below graph, write the name and equation of the function.



9. Let $A = \{1,2,3,4,5\}$ and R be relation on A defined by $R = \{(a,b) : b = a^2\}$
- Write R in the roster form.
 - Find the range of R .
10. a) Define greatest integer function.
- Draw its graph
 - Write its domain and range.

RELATIONS AND FUNCTIONS FOCUS AREA VIDEO LINK :
<https://youtu.be/zziingIQnx8>