Tutorial - 1 Behjat Riyaz 154455

1. Informal english descriptions

a. Set of odd numbers starting from 1 onwards ✓

b. Set of even numbers, zero and it also includes positive and negative. less than 5

c. Set of integers that are multiples of 2 Note the symbol N, the difference between natural numbers and integers,

d. Set of integers that are multiples of 2 and 3 ✓

e. Binary Strings that read the same forwards and backward

f. Its an empty set ✓

2. a) $\{1, 10, 100\}$ b) $\{n \mid n \in \mathbb{Z}, n > 5\}$

c) $\{n \mid n \in \mathbb{N}, n < 5\}$ d) $\{\text{"aba"}\}$ e) $\{\text{" "}\}$ (empty string)

f) $\{\}$ (empty set)

3. a) NO b) Yes c) $A \cup B = \{x, y, z\}$ d) $A \cap B = \{x, y\}$

e) $A \times B = \{(x,x), (x,y), (y,y), (z,x), (z,y)\}$ (y,x)?

cartesian product.

f) Power Set of $B = \{\{\}, \{x\}, \{y\}, \{x,y\}\}$

4.) a) $a * b$ elements 5 2^c elements (power set of C)

6) a) 7 b) f is $X = \{1,2,3,4,5\}$ and range of f is the set of values that f maps elements of X to, which is $\{6, 7\}$.

c) $g(2,10)$ is 6

d) Domain of g is $X \times Y$, range $= \{6, 7, 8, 9, 10\}$.

e) 8.

8) 7) Relation

8) a) Relationship of siblings b) I am enrolled in more than one subject.

9) Function ✓

10) a) numbers divisible by 7 and set of even numbers

b) Set of even no and numbers divisible by 2

c) these numbers between 3 and 4 and 4 and 5, here the intersection is $\{\}$ (finite)