

Exercise 10B

1. If set  $A = \{2, 3, 4, 5, 6\}$ , state which of the following statements are true and which are false  $(A \ni 2 \in A)$

2. If set  $B$ , True as elements 2 belongs to the given set  $B$ .

- True as elements 5, 6 belongs to the given set.

- False as elements 3, 4, 7 does not belong to the set  $A$ .

- False as elements 2, 8 does not belong to the set  $A$ .

2.i If set  $A = \{4, 6, 8, 10, 12, 14\}$ , state which of the following statements are correct and which are wrong.

- ~~False~~ False as element 5 does not belong to the set  $B$ . (Wrong)

- True as element 12 ~~does~~ belongs to the given set (Correct)

- ~~True~~ True as element 14 belongs to the given set (Correct)

- Wrong as element 9 does not belong to the set  $B$ .

True or False

3. (i) Sets  $\{4, 9, 6, 2\}$  and  $\{6, 2, 4, 9\}$  are not the same. False

(ii) Sets  $\{0, 1, 3, 9, 4\}$  and  $\{4, 2, 1, 3, 9\}$  are the same. True

(iii) Sets  $\{5, 4\}$  and  $\{5, 4, 4, 3, 0\}$  are the same. False

(iv) Sets  $\{8, 3\}$  and  $\{3, 3, 8\}$  are the same. True

(v) Collection of vowels used in the word 'ALLAHABAD' form a set. True

(vi) If  $P$  is the set of letters in the word 'ROOF' then  $P = \{P, O, F\}$ . True

(vii) If  $M$  is the set of letters used in the word 'Mumbai', then  $M = \text{Mumbai}$ . True

4. 1. The first five counting numbers =  $\{1, 2, 3, 4, 5\}$

2. The three types of angle - {Right angle}, {obtuse angle}, {acute angle}

3. The three types of triangle - {scalene triangle}, {isosceles triangle}, {equilateral triangle}



- 1.
- (i) A  $\{3, 6, 9, 12, 15\}$
  - ii. The set of integers between  $-4$  and  $4$ .
  - iii A  $\{-4, -3, -2, -1, 0, 1, 2, 3, 4\}$
  - iii.  $\{s, c, h, o, l\}$
  - iv.  $\{11, 13, 15, 17\}$   $\{12, 14, 16, 18\}$
  - v. Vowels used in the word 'America'
  - A  $\{a, e, i, o\}$
  - vii A  $\{m, a, d, m, a, s\}$   $\{m, d, m, s\}$

- 2.
- i. A  $\{2, 3, 5, 7, 11, 13, 17, 19\}$
  - ii.  $\{1^2, 2^2, 3^2, 4^2\} = \{1, 4, 9, 16\}$
  - iii.  $\{2, 4, 6, 8\}$
  - iv.  $\{a, b, c, d, e, f, g, h\}$
  - v.  $\{b, a, s, k, e, t\}$
  - vi.  $\{Jaipur, Jodhpur, Jalandhar, Jhansi\}$
  - vii.  $\{\square, \square, \square, \square\}$
  - viii.  $\{0, a\}$
  - ix.  $\{0, 1, 4, 9\}$

- 3.
- i.  $\{x: x \text{ is an even number less than } 12\}$
  - ii.  $\{x: x \text{ is a perfect square prime number less than } 12\}$
  - iii.  $\{x: x \text{ is a month whose name starts with letter } z\}$
  - iv.  $\{x: x \text{ is a vowel in English alphabet}\}$
  - v.  $\{x: x \text{ is a week starting with letter 'T'}\}$
  - vi.  $\{x: x \text{ is a set of multiple of } 5 \text{ less than } 85\}$

24.

1.  $\{1, 2, 3, 4, 6, 8, 12, 24\}$

$\{x: x \text{ is a natural number which divides } 24 \text{ completely}\}$

2.  $\{1, 2, 3, 5, 7, 11, 13, 17, 19, 23, 25, 27, 29, 31, 33\}$   $\{x: x \text{ is a natural number upto } 30 \text{ and divisible by } 5\}$

3. The Roster Form is  $\{C, A, L, U, T\}$

The Set-Builder Form is  $\{x: x \text{ is a letter used in the word CALCUTTA}\}$

4. The Roster Form is  $\{\text{January, February, March, April, May}\}$

The Set-Builder Form is  $\{x: x \text{ is name of first five months of a year}\}$

5.  $\{16, 25, 36, 49, 64, 81\}$   $\{x: x \text{ is a perfect square as well}\}$