Jender Heart High School, Sec.-33B chd.

Class: VI
Subject: Mathematics
Topic: Chapter- : Sets

Set:

It is the collection of well-defined objects.

Let A is the collection of even numbers from 2 to 14, then

$A = \{2, 4, 6, 8, 10, 12, 14\}$

A → Name of the set
{2, 4, 6, 8, 10, 12, 14} → members or elements of the set

* Elements of the set are always written with in the curly brackets { }
* $\in$ → belongs to
  $\notin$ → doesn't belong to

If a particular element exist in the given set, then we use $x \in A$, otherwise $x \notin A$

x → General form of element

There are three ways to write set

1. Description form
2. Tabular form
3. set builder form

1. **Description form:** In this form, we just write the statement about the given elements of the set

for eg: $B = \{-2, -1, 0, 1, 2, 3, 4\}$

Sol'n: $B = \{$Integers between -3 and $5\}$

2. **Roster form/Tabular form:** In this form, we write the members using commas.

for eg: $A = \{$Students of your present class$\}$

Sol'n: $A = \{$Riya, Raj, Meera ....$\}$

Class: VI
Subject: Mathematics
Topic: Chapter- : Sets

3. Set builder form : In this form, we make the rule by using symbols, so that each member should satisfies.

$C = \{2, 4, 6, 8, 10\}$

$C = \{x : x \in \text{even number}, 2 \leq x \leq 10\}$

Different types of sets

1. finite set
2. Infinite set
3. Empty set
4. Singleton set
5. equal set
6. Equivalent sets
7. Disjoint sets
8. Overlapping sets

1. Finite set: The elements of the set are countable.
i.e $A = \{\text{Natural no. less than } 40\}$
$B = \{\text{all the schools of Chandigarh}\}$
$C = \{\text{no. of female teachers of your school}\}$

2. Infinite set: The elements of the set are not finite.
$A = \{\text{all whole numbers}\}$
$B = \{\text{lines passing through a point}\}$

3. Empty set: A set having no element.
$A = \{\text{Natural number less than } 1\}$
$B = \{x : x \in N, x^2 = 0\}$

4. Singleton Set: A set having only one element.
$A = \{\text{a prime number less than } 3\}$
$B = \{\text{whole number less than } 0\}$

5. Equal set: Two sets are said to be equal if all the elements of A is in B and vice-versa i.e $A = B$

Class: VI
Subject: Mathematics
Topic: Chapter- , Sets

6. Equivalent sets: Two sets are said to be equivalent sets if, they have equal number of elements $A=\{a,b,c,d,e\}$ and $B=\{1,2,3,4,5\}$ so $A \leftrightarrow B$

7. Disjoint sets: Two sets are disjoint, if no element is common
for eg $A=\{$positive integers$\}$ $B=\{$negative integers$\}$

8. Overlapping Sets
If atleast one element is common in the given sets, then they said to be overlapping sets.