

For example :

The set { a, b, d, a, c, b } is the same as the set { a, b, c, d }

i.e. { a, b, d, a, c, b } = { a, b, c, d }

In general, the elements of a set are not repeated. Thus,

(i) if Q is the set of letters of the word **book**; then $Q = \{ b, o, k \}$.

There are two **os** in the word **book** but in the set it is written only once.

(ii) if R = { letters of the word 'PUPPET' }; then $R = \{ p, u, e, t \}$.

Review :

1. The elements of a set are written inside a pair of curly braces and separated by commas.
2. The set is represented by a capital letter.
3. If the elements of a set are alphabets, these elements are written in small letters.
4. The elements of a set may be written in any order.
5. No element of a set must be repeated.

Example 3 :

- (i) Write the set of letters used in the word 'MEERUT'.
- (ii) Write the set of vowels used in the word "MUSSOORIE".
- (iii) Write the set of consonants used in the word "AMRITSAR".

Solution :

- (i) Required set = { m, e, r, u, t } (Ans.)
- (ii) Required set = { u, o, i, e } (Ans.)
- (iii) Required set = { m, r, t, s } (Ans.)

Each element is written only once.

Example 4 :

For each statement, given below, state whether it is **true** or **false** :

- (i) $\{ 5, 5, 5, \dots \} = \{ 5 \}$
- (ii) $\{ 3, 4, 7 \} = \{ 4, 3, 7 \}$
- (iii) $\{ 6 - 2, 5 - 2, 4 - 2, 3 - 2 \} = \{ 4, 3, 2, 1 \}$

Solution :

- (i) **True** : as repetition of elements does not change a set. (Ans.)
- (ii) **True** : as the change in order of writing the elements does not change a set (Ans.)
- (iii) **True**. (Ans.)

EXERCISE 10(B)

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

\top (i) $2 \in A$ (ii) $5, 6 \in A$ (iii) $3, 4, 7 \in A$ (iv) $2, 8 \in A$

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

- (i) $5 \in B$ (ii) $12 \in B$ (iii) $14 \in B$ (iv) $9 \notin B$
 (v) B is the set of even numbers between 2 and 16. *Wrong*
 (vi) 4, 6 and 10 are the members of the set B. *So*

Also, write the wrong statements correctly.

3. State whether true or false :

- (i) Sets $\{4, 9, 6, 2\}$ and $\{6, 2, 4, 9\}$ are not the same. **F**
(ii) Sets $\{0, 1, 3, 9, 4\}$ and $\{4, 0, 1, 3, 9\}$ are the same. **T**
(iii) Sets $\{5, 4\}$ and $\{5, 4, 4, 5\}$ are not the same. **T**
(iv) Sets $\{8, 3\}$ and $\{3, 3, 8\}$ are the same. **T**
(v) Collection of vowels used in the word 'ALLAHABAD' forms a set. **T**
(vi) If P is the set of letters in the word 'ROOP'; then $P = \{p, o, r\}$ **T**
(vii) If M is the set of letters used in the word 'MUMBAI', then : **T**
 $M = \{m, u, b, a, i\}$

4. Write the set containing :

- (i) the first five counting numbers. (ii) the three types of angles.
(iii) the three types of triangles. (iv) the members of your family.
(v) the first six consonants of the English alphabet.
(vi) the first four vowels of the English alphabet.
(vii) the names of any three Prime Ministers of India.

5. (a) Write the members (elements) of each set given below :

- (i) $\{3, 8, 5, 15, 12, 7\}$ (ii) $\{c, m, n, o, s\}$

(b) Write the sets whose elements are :

- (i) 2, 4, 8, 16, 64 and 128 (ii) 3, 5, 15, 45, 75 and 90

6. (i) Write the set of letters used in the word 'BHOPAL'.

(ii) Write the set of vowels used in the word 'BENGAL'.

(iii) Write the set of consonants used in the word 'HONG-KONG'.

Exc - 10 (B)

4) i) The first five counting no.

Ans) $\{1, 2, 3, 4, 5\}$

ii) The three types of angles.

Ans) $B = \{\text{acute angles, right angle, obtuse angle}\}$

iii) The $\frac{1}{2}$ three types of triangles

Ans) $\{\text{Scalene triangle, isosceles triangle, equilateral triangle}\}$

iv) The members of your family.

Ans) $\{\text{mom, dad, brother, sister, grandmother}\}$

v) The first six consonants of English alphabet

Ans) $\{b, c, d, f, g, h\}$

vi) first four vowels of the English alphabet.

Ans) $\{a, e, i, o\}$

5) a) i) $\{3, 8, 5, 15, 12, 7\}$

Ans) The elements of this set $\{3, 8, 5, 15, 12, 7\}$

ii) $\{c, m, n, o, s\}$

Ans) The elements of this set $\{c, m, n, o, s\}$

b) i) 2, 4, 8, 16, 64 and 128

Ans) $A = \{2, 4, 8, 16, 64, 128\}$

c) i) BHOPAL

Ans) $X = \{b, h, o, p, a, l\}$

ii) BENGAL

Ans) $Z = \{e, a, l\}$

iii) HONG-KONG

Ans) $HL = \{h, n, g, k\}$

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