

Class: Eight

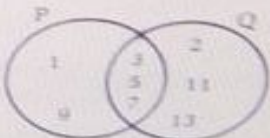
Subject- Mathematics

Source: Photo of exercise is given below.

Unit 1 **Set**

1.1 Set - Looking back

Classroom - Exercise

- Let's tell and write the elements of these sets.
 - $A = \{\text{first five multiples of } 3\}$, $A = \{ \dots \}$
 - $B = \{\text{common factors of } 10 \text{ and } 20\}$, $B = \{ \dots \}$
 - $C = \{x : x \leq 15, x \in \text{prime numbers}\}$, $C = \{ \dots \}$
- Let's rewrite these sets in set-builder forms.
 - $M = \{2, 4, 6, 8\}$, $M = \dots$
 - $N = \{3, 6, 9, 12\}$, $N = \dots$
- Let's write all possible subsets of the set $S = \{1, 4, 9\}$
.....
.....
 - Among these subsets, let's write an improper subset
- Let's tell and write the members of the following set operations from the Venn-diagram given alongside.
 - $P \cup Q = \{ \dots \}$
 - $P \cap Q = \{ \dots \}$
 - $P - Q = \{ \dots \}$
 - $Q - P = \{ \dots \}$
- If $X = \{1, 3, 5, 7, 9\}$ and $Y = \{2, 3, 5, 7, 11\}$, tell and write the elements of these set operations.
 - $X \cup Y = \{ \dots \}$
 - $X \cap Y = \{ \dots \}$
 - $X - Y = \{ \dots \}$
 - $Y - X = \{ \dots \}$

Let's take a collection of even numbers less than 10. The members of this collection are definitely 2, 4, 6, 8. These members are distinct objects when considered separately. However, when they are considered collectively, they form a single set of size four, written $\{2, 4, 6, 8\}$. It is a set of even numbers less than 10. Here, any even number less than 10 is definitely the member of the set. Therefore, a set is a collection of 'well-defined objects'.

2 Notation of set

We usually denote sets by capital letters. The members or elements of a set are enclosed inside the braces () and the members are separated with commas. The table given below shows a summary of the symbols which are used in the notation of sets.

Symbol	Name	Example	Explanation
{ }	Set	$W = \{0, 1, 2, 3, 4\}$ $O = \{1, 3, 5, 7, 9\}$	The members of the sets are enclosed inside braces { } and separated with commas.
\in	Membership	$1 \in W, 4 \in W,$ $5 \in O, 9 \in O$	The symbol ' \in ' denotes the membership of an element of the given set.
\notin	Non-membership	$5 \notin W, 6 \notin W,$ $2 \notin O, 4 \notin O$	The symbol ' \notin ' denotes the non-membership of an element to the given set.
\subset	Proper subset	$\{0, 3\} \subset W, \{1, 2, 4\} \subset W$ $\{1\} \subset O, \{1, 5, 7, 9\} \subset O$	A set which is contained in another set.
\subseteq	Improper subset	$\{0, 1, 2, 3, 4\} \subseteq W$. It means $\{0, 1, 2, 3, 4\} \subset W$ and $\{0, 1, 2, 3, 4\} = W$	A set which is contained in or equal to another set.
\supset	Super set	$W \supset \{0, 1, 2\}$ $O \supset \{5, 7, 9\}$	Set W includes $\{0, 1, 2\}$ and set O includes $\{5, 7, 9\}$.

1.3 Methods of describing sets

We usually use three methods to describe a set. These methods are description (listing or roster) and set-builder (or rule) methods.

Method	Example	Explanation
Description	M is a set of multiples of 3 less than 15.	The common properties of elements of a set are described by words.
Listing (or roster)	$M = \{3, 6, 9, 12\}$	The elements of a set are listed inside braces (or curly brackets) { }.
Set-builder (or rule)	$M = \{x : x \in \text{multiples of } 3, x < 15\}$	A variable such as 'x' is used to describe the common properties of the elements of set by using symbols.

1.4 Cardinal number of sets

Let's consider a set $A = \{2, 3, 5, 7\}$. Here, the cardinal number of the set is represented by $n(A)$ is 4. Thus, the number of elements contained by a set is called its cardinal number.

Similarly, if $B = \{0, 1, 2, 3, 4, 5\}$, then $n(B) = 6$ and so on.

Homework: Read & write all the definitions-1.

Subject- English

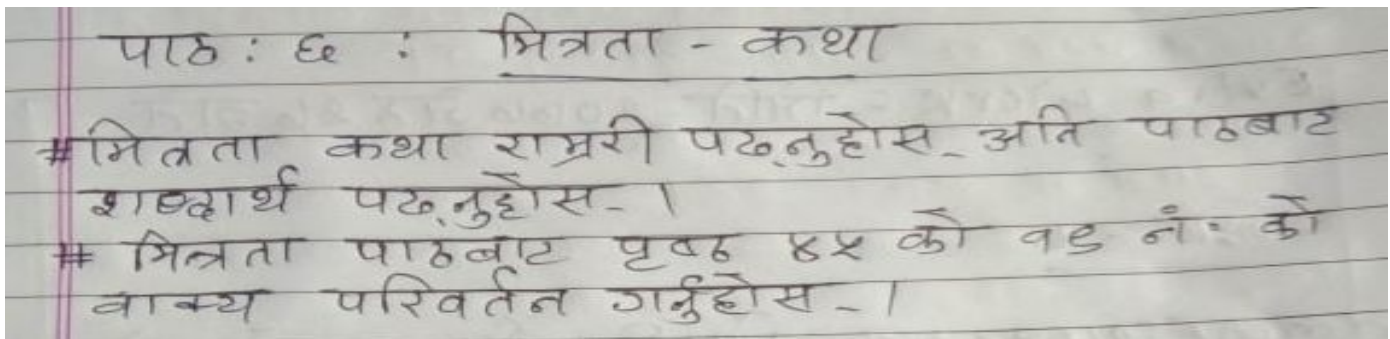
1. Complete the following news story of your own.

A bus with no. BA 3 A 2535 coming from Kabhre to Kathmandu----- in Babarmahal -----
----- the brake suddenly ----- three bike riders ----- on the spot ----- 15
passengers of the bus ----- they were treated ----- and went back home -----
-- police ----- the driver found drunk

2. Write an essay on Television in about 200 words.

Or Write a letter to your friend explaining the importance of English Language.

विषय - नेपाली



The End.