

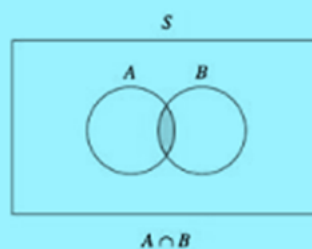
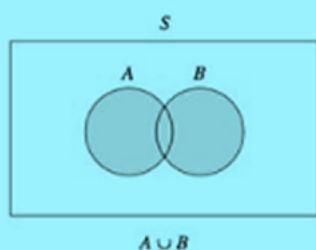
**FlexiPrep: Downloaded from flexiprep.com [https://www.flexiprep.com/]**

For solved question bank visit [doorsteptutor.com](https://www.doorsteptutor.com) [https://www.doorsteptutor.com] and for free video lectures visit [Examrace YouTube Channel](https://www.youtube.com/c/Examrace/) [https://youtube.com/c/Examrace/]

## NCERT Class 11 Mathematics Solutions: Chapter 1 – Sets Miscellaneous Exercise Part 7

Get unlimited access to the best preparation resource for CBSE/Class-9 : [get questions, notes, tests, video lectures and more](https://www.doorsteptutor.com/Exams/CBSE/Class-9/) [https://www.doorsteptutor.com/Exams/CBSE/Class-9/] - for all subjects of CBSE/Class-9.

- The **union** of set A and B, denoted by  $A \cup B$  is the set that contains all elements in either set A or set B, i.e.  $A \cup B = \{x \mid x \in A \text{ or } x \in B\}$ .
- The **intersection** of set A and B, denoted by  $A \cap B$  contain all elements that are common to both sets i.e.  $A \cap B = \{x \mid x \in A \text{ and } x \in B\}$



1. In a survey it was found that 21 people liked product A, 26 liked product B and 29 liked product C. If 14 people liked products A and B, 12 people liked products C and A, 14 people liked products B and C and 8 liked all the three products. Find how many liked product C only.

Answer:

Let A, B, and C be the set of people who like product A, product B, and product C respectively.

Accordingly,  $n(A) = 21, n(B) = 26, n(C) = 29, n(A \cap B) = 14, n(C \cap A) = 12,$

$$n(B \cap C) = 14, n(A \cap B \cap C) = 8$$

The Venn diagram for the given problem can be drawn as



It can be seen that number of people who like product C only is

$$= n(C) - n(A \cap C) - n(B \cap C) - n(A \cap B \cap C)$$

$$= \{29 - (4 + 8 + 6)\} = 11$$