

EXERCISE 5.4

1. If $n(A) = 20$, $n(B) = 18$ and $n(A \cap B) = 5$, calculate
 - (i) $n(A \cup B)$
 - (ii) $n(A - B)$
 - (iii) $n(B - A)$.
2. If $n(A \cup B) = 18$, $n(A - B) = 5$, $n(B - A) = 3$, find $n(A \cap B)$.
3. If A and B are two sets such that $n(A - B) = 5$, $n(B - A) = 3$ and $n(A \cap B) = 10$, then find the following:
 - (i) $n(A \cup B)$
 - (ii) $n(A)$
 - (iii) $n(B)$.
4. If $n(\xi) = 48$ and $n(A' \cup B') = 36$, then find $n(A \cap B)$.
5. If $n(\xi) = 40$, $n(A) = 22$, $n(A \cap B) = 8$ and $n((A \cup B)') = 6$, determine $n(B)$.
6. If $n(\xi) = 50$, $n(A) = 30$ and $n(B) = 28$, find
 - (i) the greatest value of $n(A \cup B)$
 - (ii) the least value of $n(A \cap B)$.
7. In a class of 60 students, 25 students play cricket and 20 students play tennis, and 10 students play both the games. Find the number of students who play neither.
8. In a group of people, 50 people read newspaper A, 20 read newspaper B and 10 read both newspapers. How many people read atleast one of the two newspapers?
9. In a group of 65 students, 40 like cricket, 10 like both cricket and tennis. How many like tennis only and not cricket? How many like tennis?
10. In a survey of 600 students in a school, 150 students were found to be drinking tea and 225 drinking milk and 100 students were drinking both tea and milk. How many students were drinking neither tea nor milk?
11. In a survey of 60 people, it was found that 25 people read Newspaper H, 26 read Newspaper T, 26 read Newspaper I, 9 read both H and I, 11 read both H and T, 8 read both T and I, 3 read all the three Newspapers. Find
 - (i) the number of people who read atleast one of the three Newspapers.
 - (ii) the number of people who read exactly one Newspaper.
12. Out of 20 members in a family, 12 like tea and 15 like coffee.
Assume that each one likes atleast one of the two drinks, how many like
 - (i) both coffee and tea?
 - (ii) only tea and not coffee?
 - (iii) only coffee and not tea?

13. In a group of 400 people who speak either Hindi or English or both, if 230 speak Hindi only and 70 speak both English and Hindi, then how many of them speak English only?
14. In a group of 70 people, 45 speak Hindi language and 33 speak English language and 10 speak neither Hindi nor English. How many can speak both English as well as Hindi language? How many can speak only English language?
15. In a class of 35 students, 17 have taken Mathematics, 10 have taken Mathematics but not Economics. If each student has taken either of the two subjects, then find the number of students who have taken Economics but not Mathematics.

Answers

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| 1. (i) 33 | (ii) 15 | (iii) 13 | 2. 10 | |
| 3. (i) 18 | (ii) 15 | (iii) 13 | 4. 12 | 5. 20 |
| 6. (i) 50 | (ii) 8 | 7. 25 | 8. 60 | 9. 25; 35 |
| 10. 325 | 11. (i) 52 | (ii) 30 | 12. (i) 7 | (ii) 5 (iii) 8 |
| 13. 100 | 14. 18; 15 | 15. 18 | | |