



# MATHS

## NCERT - NCERT

### MATHEMATICS(HINGLISH)

### SETS

#### Exercise 1 6

1. In a group of 70 people, 37 like coffee, 52 like tea and each person likes at least one of the

two drinks. How many people like both coffee and tea?



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## Solved Examples

1. Show that  $A \cap B = A \cap B$  implies  $A = B$



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2. A market research group conducted a survey of 1000 consumers and reported that 720 consumers like product A and 450 consumers like product B. what is the least number that must have liked both products?



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3. A school awarded 38 medals in football, 15 in basketball and 20 in cricket. Suppose these medals went to a total of 58 students and only

three students got medals in all three sports.

If only 5 students got medals in football and basketball, then the number of medals received in exactly two of three sports is



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4. Consider the sets  $A$  and  $B$  of Example 12

(Let  $A = \{ 2, 4, 6, 8 \}$  and  $B = \{ 6, 8, 10, 12 \}$ ).

Find  $A \cap B$



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## Miscellaneous Exercise

1. 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 three newspaper. Find:

- (i) the number of people who read at least one of the newspapers.
- (ii) the number of people who read exactly one newspaper.



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2. Find sets A, B and C such that  $A \cap B$ ,  $B \cap C$  and  $A \cap C$  are non empty sets and  $A \cap B \cap C = \phi$ .



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3. In a survey of 600 students in a school, 150 students were found to be taking tea and 225 taking coffee, 100 were taking both tea and coffee. Find how many students were taking neither tea nor coffee?



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## Exercise 13

1. Given the sets  $A = \{1, 3, 5\}$ ,  $B = \{2, 4, 6\}$  and  $C = \{0, 2, 4, 6, 8\}$ , which of the following may be considered as universal set (s) for all the three sets A, B and C

(i)  $\{0, 1, 2, 3, 4, 5, 6\}$

(ii)  $\phi$

(iii)  $\{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$

(iv)  $\{1, 2, 3, 4, 5, 6, 7, 8\}$



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