

PRACTICE PAPER-SET THEORY & SEQUENCE-SERIES

03/09/2026

- (1) Write the set $A = \{x: x \in \mathbb{R}, 2x + 11 = 15\}$ in the roaster form.
- (2) Let S = the set of all triangles, P = the set of all isosceles triangles, Q = the set of all equilateral triangles, R = the set of all right-angled triangles. What do the sets $P \cap Q$ and $R - P$ represents respectively ?
- (3) Let $V = \{a, e, i, o, u\}$, $V - B = \{e, o\}$ and $B - V = \{k\}$. Find the set B .
- (4) In a survey of 100 students the number of students studying the various languages were found to be: English only 18, English but not Hindi 23, English and Sanskrit 8, English 26, Sanskrit 48, Sanskrit and Hindi 8, no language 24. Find
- (i) How many students were studying Hindi?
- (ii) How many students were studying English and Hindi?
- (iii) How many students were studying Sanskrit only?
- (5) If $n(A - B) = 18$, $n(A \cup B) = 70$ and $n(A \cap B) = 25$, then find $n(B)$.
- (6) Prove that the sum of n numbers between a and b such that the resulting series becomes A.P. is $\frac{n(a+b)}{2}$
- (7) Find two positive numbers whose difference is 12 and whose arithmetic mean exceeds the geometric mean by 2.
- (8) Find the sum of all the natural numbers between 1 and 200 which are neither divisible by 2 nor by 5.
- (9) If in an A.P. $a_7: a_{10} = \frac{5}{7}$, find $a_4: a_7$
- (10) If $L = \{1, 2, 3, 4\}$, $M = \{3, 4, 5, 6\}$ and $N = \{1, 3, 5\}$, then verify that $L - (M \cup N) = (L - M) \cap (L - N)$.