

SATISH CHANDRA MEMORIAL SCHOOL

X

MATHEMATICS

HOTS QUESTION TEST 2025-26

Answer all questions: (Each question 4 marks) $(4 \times 4 = 16)$

1. Solve for x : $\frac{1}{2a+b+2x} = \frac{1}{2a} + \frac{1}{b} + \frac{1}{2x}$
2. If the ratio of the sum of the first n terms of two APs is $(7n + 1) : (4n + 27)$ then find the ratio of their 9th terms.
3. If $\sec\theta - \tan\theta = x$, show that $\sec\theta + \tan\theta = \frac{1}{x}$ and hence find the values of $\cos\theta$ and $\sin\theta$.
4. A boat goes 16 km downstream in 2 hours, and it goes 14 km upstream in the same time. Find the speed of the boat in still water and the speed of the stream.

GOOD LUCK