SEQUENCES & SERIES (Q 5, PAPER 1)

LESSON NO. 2: WORKING WITH SERIES



1997 5 (c) In an arithmetic series $S_n = n^2 + n,$ where S_n is the sum to the first *n* terms. Write down (i) S_{10} , the sum to 10 terms (ii) S_{11} , the sum to 11 terms (iii) T_{11} , the 11th. term. **SOLUTION** 5 (c) (i) $S_n = n^2 + n$ $\Rightarrow S_{10} = (10)^2 + (10)$ $\Rightarrow S_{10} = 100 + 10$ $\Rightarrow S_{10} = 110$ 5 (c) (ii) $S_n = n^2 + n$ $\Rightarrow S_{11} = (11)^2 + (11)$ $\Rightarrow S_{11} = 121 + 11$ $\Rightarrow S_{11} = 132$ 5 (c) (iii) $S_n - S_{n-1} = T_n \quad \dots \qquad 1$ $T_{11} = S_{11} - S_{10}$ $\Rightarrow T_{11} = 132 - 110 = 22$