

# *Sums Of A Sequence*

$$T_1 + T_2 + T_3 + \dots + T_n = S_n = \sum_{k=1}^n T_k$$

$$\begin{aligned} \text{e.g. (i)} \sum_{n=1}^5 2n + 3 &= (2 + 3) + (4 + 3) + (6 + 3) + (8 + 3) + (10 + 3) \\ &= \underline{45} \end{aligned}$$

(ii) If  $S_{10} = 29$  and  $S_{11} = 37$ , find  $T_{11}$

$$\begin{aligned} T_{11} &= S_{11} - S_{10} \\ &= 37 - 29 \\ &= \underline{8} \end{aligned}$$

(iii) If  $S_n = 5n^2 - 2$ , find  $T_n$

$$\begin{aligned}T_n &= S_n - S_{n-1} \\&= 5n^2 - 2 - [5(n-1)^2 - 2] \\&= 5n^2 - 2 - 5n^2 + 10n - 5 + 2 \\&= \underline{10n - 5}\end{aligned}$$

**Exercise 6G; 1ace etc, 2bdf etc, 4**

**Exercise 6H; 3, 4b, 8ace etc**