$\Delta(r) = \begin{vmatrix} 1 & x & n+1 \\ r & y & \frac{n(n+1)}{2} \\ 2r-1 & z & n^2-1 \end{vmatrix}$, then $\sum_{r=0}^{n} \Delta(r)$ is equal to:

Solution:

$$\sum_{r=0}^{n} \Delta(r) = \begin{vmatrix} \sum_{r=0}^{n} 1 & x & n+1 \\ \sum_{r=0}^{n}(r) & y & \frac{n(n+1)}{2} \\ \sum_{r=0}^{n}(2r-1) & z & n^2-1 \end{vmatrix}$$

$$= \begin{vmatrix} n+1 & x & n+1 \\ \frac{n(n+1)}{2} & y & \frac{n(n+1)}{2} \\ n^2-1 & z & n^2-1 \end{vmatrix}$$

$$= 0$$

A $\frac{n^2(n+1)}{2}$

B n^3

C $\frac{n(2n+1)(3n+1)}{2}$

D 0

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