

$$\frac{0}{\sum_{n=1}^{\infty} \tan^{-1}\left(\frac{2}{n^2}\right)}$$

$$\tan^{-1} \frac{(n+1) - (n-1)}{1 + (n-1)(n+1)}$$

$$\lim_{n \rightarrow \infty} \sum \tan^{-1}(n+1) - \tan^{-1}(n-1)$$

$$\begin{aligned} & (\cancel{\tan^{-1} 2} - \cancel{\tan^{-1} 0}) + (\cancel{\tan^{-1} 3} - \cancel{\tan^{-1} 1}) + (\cancel{\tan^{-1} 4} - \cancel{\tan^{-1} 2}) \\ & + (\cancel{\tan^{-1} 5} - \cancel{\tan^{-1} 3}) + \dots + \tan^{-1} n + \tan^{-1} (n+1) - \tan^{-1} (n-1) \\ & \tan^{-1} n + \tan^{-1} (n+1) \end{aligned}$$

$$[\therefore \tan^{-1} 0 - \tan^{-1} 1 + \tan^{-1} n + \tan^{-1} (n+1)]$$

$$\Rightarrow \boxed{\frac{3\pi}{4}} \text{ A}$$