

$$\lim_{h \rightarrow \infty} \left[\frac{n}{n^2} + \frac{n}{n^2+1^2} + \frac{n}{n^2+2^2} + \dots + \frac{n}{n^2+(n-1)^2} \right]$$

$$= \lim_{n \rightarrow \infty} \sum_{k=0}^{n-1} \frac{n}{n^2 + k^2} = \sum_{k=0}^{n-1} \frac{1}{n \left(1 + \left(\frac{k}{n} \right)^2 \right)}$$

$$= \int_0^1 \frac{dx}{1+x^2}$$

$$= \left(\tan^{-1}(x) \right)_0^1$$

$$= \pi/4$$