

Problem of the Week-5: An Infinite Sum

Find the exact value of the limit

$$\lim_{n \rightarrow \infty} \sum_{i=1}^n \frac{in^2}{n^4 + i^4}$$

Explain your reasoning, and show your steps.

(Hint: It is possible to realize the sum as a Riemann sum)

Posting Date 3/22/09. Submit solutions to Noah Aydin, Mathematics Department, RBH 319 (e-mail or hard-copy, but hard copy submissions must include a time stamp) by 4 pm on 4/03/09.