

Problem 5: Find the Sum

Find the exact value of the sum

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

As always, show your work, fully explain and justify your answer. A solution that is mainly obtained by a calculator or computer will not be accepted.

Posting Date 2/19/2022. Submit solutions to Noah Aydin, RBH 319 (e-mail or hard-copy, but hard copy submissions must include a time stamp) by noon on Saturday March 5, 2022.