

Quiz 1

Math 102, Term 171

NAME:

ID:

Problem 1. Consider $S = \lim_{n \rightarrow \infty} \sum_{i=1}^n \left(\frac{i^2}{n^3} + \frac{1}{n} \right)$

1. Evaluate S .
2. Write the given limit S as a definite integral.
3. Determine a region whose area is equal to S .

Problem 2. Using three approximating rectangles and midpoints, estimate the area under $y = \sin^2 x$ between $x = 0$ and $x = \pi$.