

Reading Quiz #9

姓名：_____ 系級：_____ 學號：_____ 分數：_____

Read Section 5.2(pages 326-339) and answer the following problems.

1. Express the limit as a definite integral. Do not evaluate the limit.

$$(a) \lim_{n \rightarrow \infty} \sum_{i=1}^n \frac{i^4}{n^5}$$

$$(b) \lim_{n \rightarrow \infty} \frac{1}{n} \sum_{i=1}^n \frac{1}{1 + (i/n)^2}$$

2. Find $\int_1^2 x^{-2} dx$. Hint: Choose x_i^* to be the geometric mean of x_{i-1} and x_i (that is, $x_i^* = \sqrt{x_{i-1}x_i}$)

and use the identity $\frac{1}{m(m+1)} = \frac{1}{m} - \frac{1}{m+1}$