

Homework Assignment 8.

Given Nov 13, due Nov 25.

1. Read Corollary 1, 2, 3 on page 250-251.
2. Section 4.6: Problems 24, 25, 26, 28, 33, 34.
3. Section 5.2: Problems 34, 36, 38, 39, 46.
4. Section 5.2: In problem 38 and 39, take the uniform partition, rewrite the limit in terms of n and then express c_k in terms of n and k , as we did in class. See if you can still read the result as a definite integral. If you can't, try a few more from problems 35-42.
5. Use the binomial expansion for $(k + 1)^4$ to show directly that

$$\lim_{n \rightarrow \infty} \frac{1}{n^4} \sum_{k=1}^n k^3 = \frac{1}{4}$$

6. Section 5.3: Problems 2, 40, 45, 46
7. Is 'The Mean Value Theorem for Definite Integrals' (Theorem 2, page 298) still valid without assuming f to be continuous? Explain.