Assignment 9 (10/16)

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Problem 1

Suppose $f(x) = x^2$. For a positive real number a, find the value of

$$\lim_{n\to\infty} \sum_{i=0}^{n-1} \frac{a}{n} f\left(\frac{ai}{n}\right).$$

Also find the value of

$$\lim_{n\to\infty} \sum_{i=0}^{n-1} \frac{a}{n} f\left(\frac{a(2i+1)}{2n}\right).$$

Problem 2

Problems $5.3.(8, 14, 22, 33)$.

Problem 3

Evaluate the integrals by guessing an antiderivative: $5.4.(17, 32)$.

Problem 4

Problems $5.4.(50, 52, 62, 64)$.

Problem 5

Problems $5.8.(7 - 15)$.