

Problem Set

Section 6.5

Average Value of a Function

Problem 1

Find the average value of the function $f(x) = x^2\sqrt{x+1}$ over $[-1, 0]$.

Problem 2

Find the average value of the function $f(x) = \cos^2(\pi x)$ over $[-1, 1]$.

Problem 3

Find the number $a < 0$ such that the average value of $f(x) = 3x^2 - 2x + 2$ on the interval $[a, 0]$ is equal to 8.

Problem (Revision)

If f is an EVEN continuous function and $\int_0^4 f(x)dx = 5$. Find $\int_{-2}^2 [xf(x^2) + f(2x)] dx$.

