Homework 2

Math 252

Due April 14th at 11:59 PM

Textbook Exercises

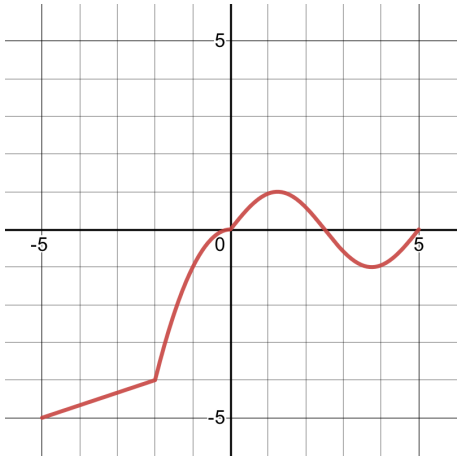
4.10*: 465, 471, 473, 477, 481, 493, 499, 501

1.3: 149, 153, 161, 171, 175, 181, 189

*From Volume I of the textbook

Exercise 1: Let $g(t) = 2t^6 + 1 - \sin(t) + \sqrt{t}$. Compute $\int g(t)\, dt$.

Exercise 2: A function $f(x)$ defined on $[-5, 5]$ has an antiderivative $F(x)$ as graphed below. Assume that $f(-5) = 0$.



a) What is the average value of f on $[-5, 5]$?

b) What is $f(-3)$?

c) Sketch a graph of f on $[-5, 5]$.

Bonus: The derivative of a differentiable function need not be continuous. Give an example of this.

On the other hand, the integral of an integrable function is continuous. Give an explanation of why this is the case.