

MATH 242: Principles of Analysis
Homework Assignment #10 (Last One!)

DUE DATE: Tues., Dec. 8, 5:00 PM

For this assignment, you are allowed to work in groups of up to four people and turn in **one** assignment for your group. Everyone in your group will receive the same grade on the assignment. You should write up solutions neatly to all problems, making sure to show all your work. Please cite any references (web based or text) that you may have used for assistance with the assignment.

1. Suppose that $f(x) = \begin{cases} 2 & \text{if } -2 \leq x \leq 0 \\ -1 & \text{if } 0 < x < 1 \\ -5 & \text{if } 1 \leq x < 2 \\ \pi & \text{if } x = 2 \end{cases}$

(a) Show that f is integrable on $[-2, 2]$.

(b) Find $\int_{-2}^2 f$.

2. Do the following exercises from the course text *Understanding Analysis* by Stephen Abbott:
7.2.1, 7.2.2, 7.3.4, 7.4.4, 7.5.2, 7.5.4, 7.5.7