

Practice Midterm 1

Math 252

Exercise 1: Let $f(x)$ be a continuous function on $[a, b]$. Write both parts of the Fundamental Theorem of Calculus.

Exercise 2: Find $\int_1^4 (s^3 + s^2) \, ds$.

Exercise 3: Evaluate $\int_0^5 x^3 \, dx$ by taking a limit of Riemann sums.

Exercise 4: Evaluate $\int (x + 1)^{10} \, dx$.

Exercise 5: If an object's total distance traveled over 5 seconds is 12 meters, can its net displacement be 2 meters?

Exercise 6: What is the average value of $\sin(x)$ on $[-\pi, \frac{\pi}{2}]$?