

Math 2250 Quiz 11

Name.....

Points will be deducted for untidy or disorganized answers

We learned in class that if f is integrable on $[a, b]$, then

$$\int_a^b f(x) dx = \lim_{n \rightarrow \infty} R_n$$

where

$$R_n = \frac{b-a}{n} \sum_{k=1}^n f\left(a + k \frac{b-a}{n}\right).$$

1. (5 points)

(a) We know that $f(x) = 2x^3 - x$ is integrable, why?

(b) Use R_3 to approximate the definite integral $\int_0^3 (2x^3 - x) dx$.

(c) Use the formula given above to actually evaluate the definite integral

$$\int_0^3 (2x^3 - x) dx.$$