Estimating the Area Under a Graph Using Riemann Sums.
MATH 2301 (Barsamian) Group Work 27

The goal is to estimate the shaded area in the middle figure. You will do this by finding the values of the Riemann sums \( L_4 \) and \( R_4 \). This will give you lower and upper bounds for the shaded area.

(A) Draw in the rectangles for the left sum \( L_4 \).

(B) Find the value of \( L_4 \).

(C) Draw in the rectangles for the right sum \( R_4 \).

(D) Find the value of \( R_4 \).

(E) Using information from questions (B) and (D), fill in the blanks below to make a true inequality of the form

\[ \text{underestimate} < \text{Area} A < \text{overestimate} \]

\[ \underline{\hspace{2cm}} < \text{Area} A < \underline{\hspace{2cm}} \]