
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) In the expression $L_4 \leq \int_{1}^{5} f(x) \, dx \leq R_4$, replace the symbols $L_4$ and $R_4$ with the values from questions (B) and (D).

$$\text{______} \leq \int_{1}^{5} f(x) \, dx \leq \text{______}$$
For the function \( f(x) = x^2 - 2x - 3 \) on the interval \([1,9]\).
(a) Compute \( L_4 \).
(b) Compute \( R_4 \).
(c) Compute \( M_4 \).