Class Drill 27: Estimating the Area Under a Graph Using Riemann Sums.

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).

$$\underline{\quad} \leq \int_1^5 f(x) \, dx \leq \underline{\quad}.$$