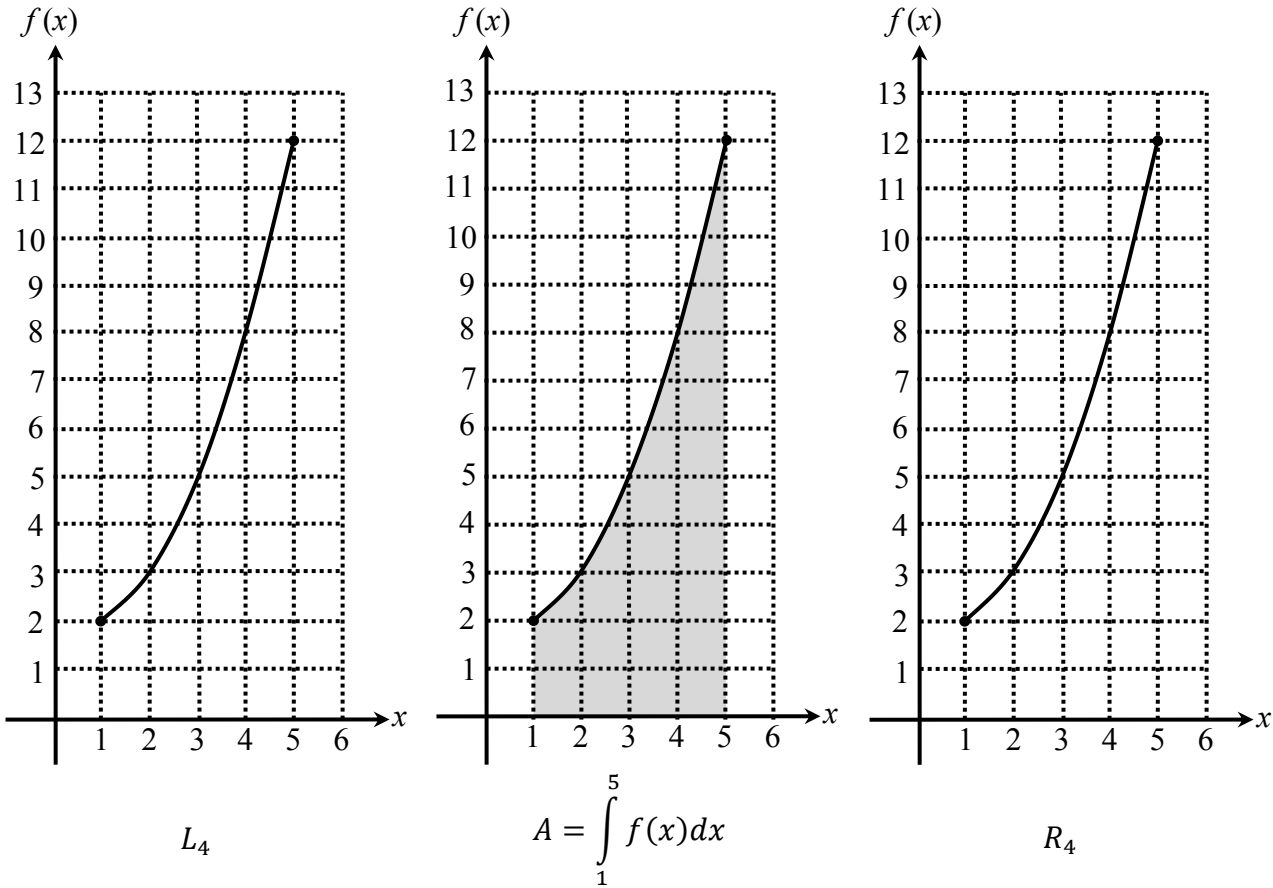


Class Drill 16: Estimating the Area Under a Graph Using Riemann Sums.

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).

$$\underline{\hspace{2cm}} \leq \int_1^5 f(x) dx \leq \underline{\hspace{2cm}}$$