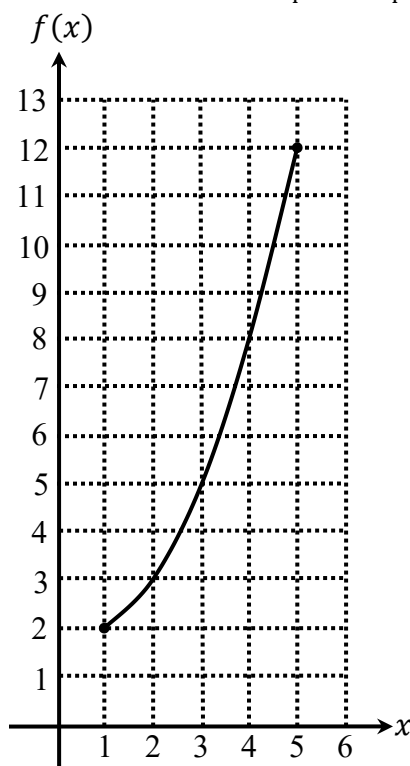
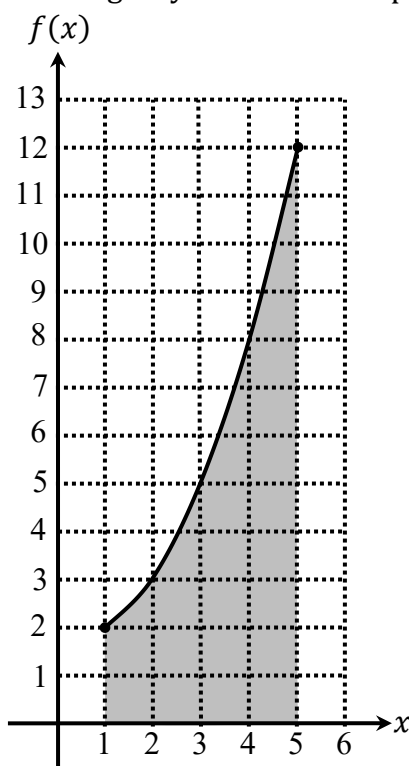


Handout: Computing Riemann Sums for a Function Given by a Graph (Stewart Section 5.1)

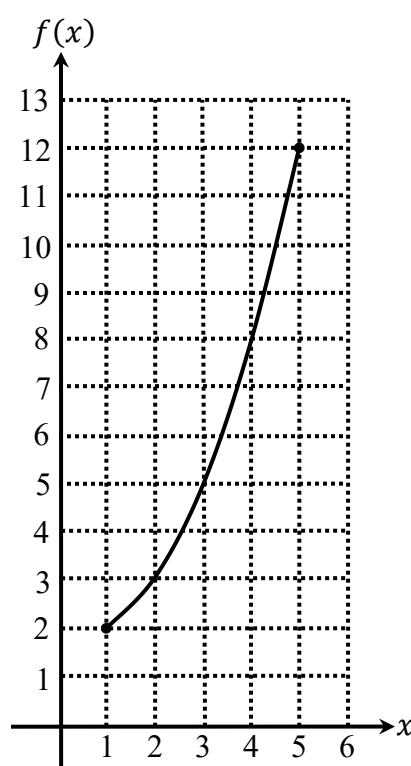
The goal is to estimate the shaded area in the middle figure. You will do this by finding the values of the Riemann sums L_4 and R_4 . This will give you lower and upper bounds for the shaded area.



L_4



unknown area



R_4

(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) Use the values from questions (B) and (D) to build a true inequality

_____ < unknown area < _____

Handout: Computing Riemann Sums for a Function Given by a Formula (Stewart Sect. 5.1)

The goal is to find approximations for the signed area between the graph of the function $f(x) = \frac{1}{x}$ and the x axis on the interval $[1,7]$ by computing Left and Right Riemann Sums with 3 rectangles. That is, find values for L_3 and R_3 . Show all details clearly. (Hand calculations! No calculators or cell phones!)

(a) Sketch three side-by-side copies of the graph of the function $f(x) = \frac{1}{x}$ on the interval $[1,7]$.

- On the left graph, sketch and shade the rectangles for L_3 .
- On the middle graph shade the region between the graph and the x axis.
- On the right graph, sketch and shade the rectangles for R_3 .

(b) Find values for L_3 and R_3 .