

Problem 1. Let $f : [0, 3] \rightarrow \mathbb{R}$ be given by $f(x) = x^2$. Let $n = 5$.

(a) Compute the partition P of $[0, 3]$ divided into n subintervals.

(b) Compute the left Riemann sum L of f on P . Do not use a calculator.

(c) Compute the right Riemann sum R of f on P . Do not use a calculator.

(d) Which is bigger, L or R ? Why? Use these two number to estimate the area under the curve.

Problem 2. Let $f : [1, 4] \rightarrow \mathbb{R}$ be given by $f(x) = \sqrt{x}$. Let $n = 6$.

(a) Compute the partition P of $[1, 4]$ divided into n subintervals.

(b) Compute the left Riemann sum L of f on P . Use a calculator.

(c) Compute the right Riemann sum R of f on P . Use a calculator.

(d) Which is bigger, L or R ? Why? Use these two number to estimate the area under the curve.