Assignment # 4.
Due Feb. 10, 17:00

Problem 1.   Prove that an increasing function on a closed interval is integrable.

Problem 2.   Prove that every Lipschitz function is uniformly continuous.

Problem 3.   Is the following function uniformly continuous?

a. $f(x) = \sqrt{x}$ on $[1, \infty)$ **b.** $f(x) = \sqrt{x}$ on $[0, \infty)$.

Problem 4.   Is the following function a Lipschitz function?

a. $f(x) = x^2$ on $[-1, 1]$ **b.** $f(x) = x^2$ on $[1, \infty)$.

c. $f(x) = \sqrt{x}$ on $[1, \infty)$ **d.** $f(x) = \sqrt{x}$ on $[0, 1]$.