Calculus II, Fall 2014 (http://www.math.nthu.edu.tw/~wangwc/)

Homework Assignment for Week 04

- 1. Section 10.10: Problems 10, 27, 35, 37, 43, 46, 51, 64, 66.
- 2. Section 11.2: Problems 1, 33, 41.
- 3. Section 11.2: Prove the following generalization of problem 41.

Let $(x(t), y(t)), a \leq t \leq b$, be a parametrization of a plane curve and $f : [0, 1] \mapsto [a, b]$ be any monotone increasing function with continuous derivative. This gives another parametrization of the curve as $(\bar{x}(s), \bar{y}(s)) = (x(f(s)), y(f(s))), 0 \leq s \leq 1$. Show that the length of $(x(t), y(t)), a \leq t \leq b$ is the same as $(\bar{x}(s), \bar{y}(s)), 0 \leq s \leq 1$.