Math 205A

Homework #4—Due Feb 3, 2012

#1. Problems #7, page 65

#2. Problem #10, page 66

#3. Suppose f is an entire function (holomorphic in $\mathbb{C}$) and that $\Re(f)$ is bounded, show f is a constant.

#4. Determine the regions Ω in which the following functions are holomorphic:

$$f(z) = \int_{-1}^{1} \frac{e^{tz}}{1+t^2}\, dt, \quad g(z) = \int_{0}^{1} \frac{dt}{1+tz}$$