Homework 4

1) Problem 10E: You may assume that $f_n(z) = \prod_\eta (z - \eta)$ where the product is over all η such that $\eta^n = 1$ and $\eta^k \neq 1$ for $1 \leq k < n$.

2) Suppose that f is a function from $\mathbf{N}$ to $\mathbf{N}$ such that $f(a+b) \geq f(a)+f(b)$. Prove that $\lim_{n\to\infty} f(n)/n$ exists (possibly ∞).

3) Problem 11D

4) Problem 11E