

Last name _____

First name _____

LARSON—MATH 550—HOMEWORK WORKSHEET h12
The Inversion Theorem

Inversion

Let $f(n)$ be a function defined on $\mathbb{Z}^{\geq 0}$, and define:

$$g(n) = \sum_k \binom{n}{k} (-1)^k f(k).$$

We **proved**:

$$f(n) = \sum_k \binom{n}{k} (-1)^k g(k).$$

- Write up a nice clear complete proof of this Inversion Theorem. Include explanation for each step. Be maximally verbose.