Zackery Field
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CS 70, Summer 2013
Homework 1
Problem 10 (9 Points)

10a [3 points]

I think that this proof is correct.

10b [3 points]

There is a proposition in the inductive step that states $max(x-1, y-1) = n$. This proposition, call it p, is invalid for the base case n=0. It states in the base case that for n=0, x and y are both 0. Therefore, it is invalid to make the statements x-1, and y-1 because x and y are both $\in \mathbb{N}$ and -1 exists outside $\mathbb{N}$.

10c [3 points]

The issue with this proof lies in the inductive step. The inductive step requires that you apply your inductive hypothesis to see if it holds. In this case, they simply plugged in n+1 into both sides of the equality, no where did they apply their hypothesis.