

**PLEASE WRITE YOUR NAME ON THE BACK OF THIS SHEET AT THE BOTTOM, NOT ON THE FRONT.**

1. Use *induction* to prove: If  $1 + a > 0$ , then for all  $a \in \mathbb{R}$  and  $n \in \mathbb{Z}^+$

$$(1 + a)^n \geq 1 + na .$$

2. On the back of this sheet or separately, rewrite your proof of the eigenvalue problem on Quiz#1 carefully. (Make sure you make your reasoning clear, never assume what you are trying to show, and avoid unnecessary verbiage.) Also, please read my “Rules for Rewrites” handout on the website.