

Assignment 2

Due Monday, Feb 19, 06 at 11:00 AM in Class

Remarks: I may not grade all assignments, and may not grade all questions/parts on the assignments I choose to grade. You're welcome to ask me for help. Show your work and explain every step. If you don't provide enough explanation, you may get no credit or partial credit. You should do the assignment by yourself.

Prove the following by mathematical induction:

(1) $1^3 + 2^3 + 3^3 + \cdots + n^3 = \frac{n^2(n+1)^2}{4}, \forall n \geq 1.$

(2) $n! \geq 2^{n-1}, \forall n \in \mathbb{Z}^+.$