

Due Wednesday, March 4.

Be sure to write clearly, using complete sentences. Do not use abbreviations like s.t., w/o, b/c, c/o, etc. In all problems you must prove that your answer is correct, even if the problem does not explicitly ask you to do so.

1. Problem 3.2 Page 71. Hint: What is a statement that should be true for all n ?
2. Problem 3.17 Page 72.
3. Problem 3.22 Page 72. Note that $a_1, \dots, a_n \in \mathbb{R}$. You should use the Triangle Inequality in your inductive step.
4. Problem 3.23 Page 72.
5. Problem 3.26 Page 73. Give an induction proof, where $P(n)$ is the statement that $a_n = n^3 - n + 1$.
6. Problem 3.30 Page 73. Do this without using induction. Use two results we have proved in class.
7. Problem 3.57 Page 75. The word sequence means list. There is a typo: replace " $n \geq 2$ " by " $n \geq 3$." In the inductive step, assume $1 \leq a_{n-2} \leq 2$ and $1 \leq a_{n-1} \leq 2$, and prove that the formula for a_n gives a number between 1 and 2.