MATH 3161 Homework Assignment 3

Instructions: Solve and turn in all of the assigned problems, showing ALL steps or reasoning used in your solutions.

Due on Thursday, April 18th, at the BEGINNING of class.

p. 43-44: (Section 2.2) Problems 1(b), 6

p. 49-50: (Section 2.3) Problems 2(b), 4, 8(a,b)

Prove that for any $n \in \mathbb{N}$, any set $A$ of cardinality $n$ (this means $A \sim \{1, 2, \ldots, n\}$), and any countable set $B$ which is disjoint from $A$, the union $A \cup B$ is countable.

Show that if $B$ is a set with least upper bound $\beta$, then there exists a sequence of elements $b_n$ of $B$ so that $b_n \to \beta$. 