

MA651 Topology. Homework 3

Homework due February 14, 2006

1. Find the mistakes in the lecture notes (I have intentionally made several mistakes, and you might find even more).
2. Consider the questions given as a homework in the lecture notes (i.e. prove Propositions 23.3, 23.4, 23.7, and 25.1)
3. Show that R^n with the Euclidean topology has a countable basis.
4. Prove that $\text{Int}(A) = X - (\overline{X - A})$
5. Let $E = \{x_1, x_2, x_3, x_4, x_5\}$ and let $A \subset \mathcal{P}(E)$ where $A = \{\{x_1, x_2, x_3\}, \{x_5, x_1, x_3\}, \{x_4, x_3\}\}$
Find the topology $\mathcal{T}(A)$ on E generated by A .