Presentation problems for 2/08/13

Problem 1: Prove that the Zariski topology is not Hausdorff for both $\mathbb{R}$ and $\mathbb{R}^2$.

Problem 2: Prove that if X is a Hausdorff space, then a sequence of points of X converges to at most one point of X. Then complete exercise 14 from section 17 of the text to show that the first sentence is not "if and only if".