MAT 540A Fall 2014   Take-home test No. 2

Please turn in the solutions on Monday, September 29, in class. Each problem here is worth 2 points.

Question 1 (Qual Exam from June 1998)**.** Let X be a set. Prove there exists the smallest topology on X which makes X a T_1 space (points are closed sets).

Question 2. Do problem 2 on page 92 in Munkres.

Question 3. Do problem 4 on page 92 in Munkres.

Question 4. Let X be a topological space and $A \subset X$ a subset of X. Prove or disprove: $\overline{A} = \text{Int}(A) \cup A'$.

Question 5. Do problem 4 on page 100 in Munkres.