Topology
HW 1
Due Thursday, Sept 9

1. Assuming that $f$ is 1-1, prove that $f(A \cap B) = f(A) \cap f(B)$. Give an example to show that equality does not hold if $f$ is not 1-1.

2. Prove that the set $S$ of all sequences of 0's and 1's is uncountable. Note that $\{x_n\} \in S$ means that $x_n = 0$ or $1$ $\forall n$.

3. Text: 1.3

4. Text: 1.7

5. Text: 1.9