Assignment 6

1. Prove \( A^c = U \setminus G \) where \( G \subseteq A \)

2. Prove \( A = \bigcap H \) where \( H \) is closed \( H \subseteq A \)

3. Prove \( (A^c)^c = (A^c)^c \)

4. Prove \( (A^o)^c = (A^o)^c \)

5. Prove \( b \cup b \cap A \subseteq \bar{A} \) if \( A \) is closed

6. Prove \( \emptyset \) and \( R \) are the only subsets of \( \mathbb{R} \) that are both open and closed.

7. Prove \( a_n \rightarrow x \) and \( |a_n - b_n| < 1/n \) \( \Rightarrow b_n \rightarrow x \).