

Name and student number:

- [5] 1. Let A and B be subsets of some universal set U . Prove that if $A \subseteq B$, then $B^c \subseteq A^c$.

- [5] 2. Prove the following assertion, or give a counterexample to show that it is false:

For any subsets A , B , C , and D of some universal set U , if $A \subseteq C$ and $B \subseteq D$, and $A \cap B = \emptyset$, then $C \cap D = \emptyset$. (Here, \emptyset denotes the empty set.)