1) Given $A = \{1,2,3\}, B = \{2,3,4\}, C = \{1,4,5,6\}, \text{ and } D = \{3,6\}$ find the sets below. The universe is all positive integers less than 10.

$A \cap B =$

$B \cup D =$

$A - C =$

$A^c =$

$B \times D =$

2) Let $A$ and $B$ be sets. Prove that $A \cap B \subseteq A$. 
3) Let \( A \) and \( B \) be sets. Prove that \((A \cup B = B) \Rightarrow A \subseteq B\)