# Logic and Proofs Exercises

1) Prove that an integer is even if and only if its square is even.

2) Let $A$, $B$, and $C$ be any sets. Prove that

$$A \backslash (B \cup C) = (A \backslash B) \cap (A \backslash C)$$

(Hint: show equality by proving that both sides of the equality are subsets of each other)