1. Prove or refute: An encryption scheme with message space $M$ is perfectly secret if and only if for every probability distribution over $M$ and every $c_0, c_1 \in C$ we have $Pr[C = c_0] = Pr[C = c_1]$.

2. Prove or refute: An encryption scheme with message space $M$ is perfectly secret if and only if for every probability distribution over $M$, every $m, m' \in M$ and every $c \in C$ we have $Pr[M = m \mid C = c] = Pr[M = m' \mid C = c]$. 