Q1:

Proof that $\log{(n!)} = O(nlogn)$. (Hint: Use the definition of Big-O notation at p.28 of CH3 slide)

Q2:

Proof that $\log{(n!)} = \Omega(n\log{n})$. (Hint: Use the definition of Big-Omega notation at p.31 of CH3 slide)