Quiz 7

(1) Consider the following language:

$L = \{(\Phi, \Psi)$: Either $\Phi \in$ SAT and $\Psi \in$ TAUT
or $\Phi \notin$ UNSAT and $\Psi \notin$ TAUT$\}$

Show that $L \in \Sigma_2^P \cap \Pi_2^P$ [8]

(2) Show that if 3-SAT is poly-time Karp reducible to $\overline{\text{3-SAT}}$, then PH = NP. [12]