1. What is the definition of a mapping reduction from language *A* to language *B*?
2. What is the definition of $A \leq \_{m} B$?
3. Suppose that $A$ and $B$ are both computable languages over alphabet $Σ$. Show that $A \leq \_{t}$ B
4. Suppose that $A$ and $B$ are both computable languages over alphabet $Σ$ where $B \ne \{\}$ and $B \ne Σ^{\*}$. Show that $A \leq \_{m}B$.
5. Suppose that $A \leq \_{t}$ B and $B$ is a regular language. Does that imply that $A$ is also a regular language? Justify your answer.
6. Suppose that $A$ is a language where $A \leq \_{t }$ HLT. Can you conclude that $A$ is uncomputable?
7. Define $L\_{1}=\left\{p \right| Run(p,p)\downright \}$ and $L\_{2}=\left(p,x\right) | Run(p,x)\downright \}$ Give a mapping reduction from $L\_{1}$ to $L\_{2}$.