

1. For any language A , let $A^R = \{w^R \mid w \in A\}$ where w^R is the string w in reverse order. Prove that if A is regular, then A^R is also regular. You can assume without loss of generality that an NFA recognizing A has only one accept state.
2. Let $L = \{wtw \mid w, t \in \{0, 1\}^+\}$. Prove that L is not regular.