5. Prove that a turing variant M δ: Q x $\Gamma \rightarrow$ Q x Γ x $\{R, S\} \neq \delta$: Q x $\Gamma \rightarrow$ Q x Γ x $\{R, L\}$. Trivially we know M cannot move left therefore M cannot read anything it writes. Because of this it will act very similar to a DFA or NFA.

   An NFA that is equivalent to this Turing machine will have ϵ transitions from each state back to itself as the Turing machine could stay and keep rewriting the symbol so the NFA would just keep looping back to itself. It is important to note that this NFA would still need to have a finite amount of steps, but because of the ϵ transitions we can do the 'unlimited' amount of work a Turing machine can. Therefore we will be able to make an NFA that can accept any string a Turing machine that only moves right or stays can accept.

   Therefore we have shown that this does not have the power of a standard turing machine and infact has the same capabilities as an NFA so it will recognize regular languages.