Assignment 2

1. True. Since $L=\{w^R \mid w\in\{x, xy, xyz\}\}=\{v \mid v\in\{zyx, yx, x\}\}$, then for any $p, q\in L$, there is no z such that $pz=q$, as last symbol of p and q always x.

2. False. It can repeat the states in Q.

3. state set $Q=\{q_{right}, q_{read}, q_{rewrite}, q_{back0}, q_{back1}, q_{cy}, q_{have0}, q_{have1}, q_{p0}, q_{p1}, q_{accept}\}$

tape alphabet $\Gamma=\{\sqcup, 0, 1, +, c, O, I\}$

4. reject state.

halting configuration : $1O\ q_{reject}\ 1+cO\sqcup$

5. never halting