Quiz 1

0. Your NAME:

1. Draw a DFA that accepts all strings $x \in \{0, 1\}^*$ whose digits sum to 3.

2. Give an example of an infinite language L such that $L = L^*$. Then give an example of a finite language L_0 such that $L_0 = L_0^*$.

3. Let $M = (Q, \Sigma, \delta, q_0, F)$ be an NFA. Describe—formally and by a picture—an NFA $M_\varepsilon = (Q_\varepsilon, \Sigma, \delta_\varepsilon, q_\varepsilon, F_\varepsilon)$ such that $L(M_\varepsilon) = L(M) \cup \{\varepsilon\}$.

Have a nice day!