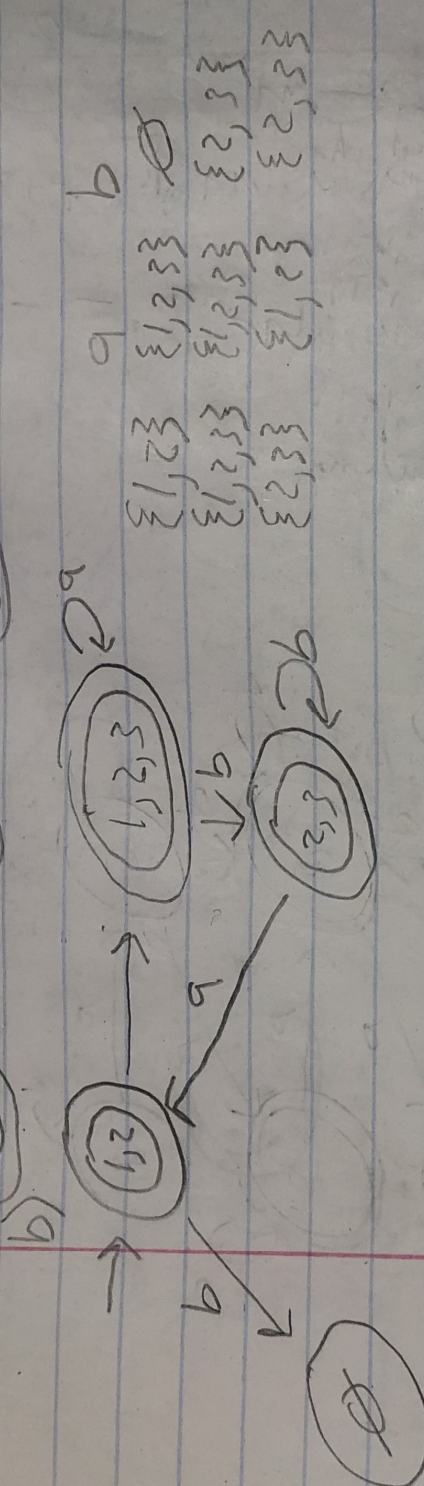




3. 1.16 a)  $\begin{matrix} & a & b & \\ & \swarrow & \searrow & \\ 1 & \xrightarrow{b} & 2 & \\ & \swarrow & \searrow & \\ & 1 & 2 & \\ & \{1,2\} & \{2\} & \\ & a,b & & \end{matrix}$



4.  $E(q_0)$

- $\delta_1(q_0, \text{letter}) = E(\{q_0, q_1, 3\}) = \{q_0, q_1, 3\}$
- $\delta_1(q_0, \text{digit}) = \emptyset$
- $\delta_1(\{q_0, q_1, 3\}, \text{letter}) = \{q_0, q_1, 3\}$
- $\delta_1(\{q_0, q_1, 3\}, \text{digit}) = \{q_2, q_4\}$
- $\delta_1(\{q_2, q_4\}, \text{letter}) = q_3$
- $\delta_1(\{q_2, q_4\}, \text{digit}) = \{q_2, q_4, q_5\}$
- $\delta_1(q_3, \text{letter}) = \emptyset$
- $\delta_1(q_3, \text{digit}) = \emptyset$
- $\delta_1(\{q_2, q_4, q_5\}, \text{letter}) = q_3$
- $\delta_1(\{q_2, q_4, q_5\}, \text{digit}) = \{q_2, q_4, q_5\}$

