Languages & DFAs

- λ represents empty string.
- $(ab)^2 = abab$

$$- (ab)^0 = \lambda$$

$$\sum = \{a, b\} \tag{1}$$

$$\sum * = \{\lambda, a, b, aa, bb, \ldots\}$$
 (2)

$$\sum = \{a, b\}$$

$$\sum * = \{\lambda, a, b, aa, bb, \ldots\}$$

$$\sum + = \sum * - \{\lambda\}$$

$$(1)$$

$$(2)$$

$$(3)$$

- δ can be described by: state delta(state q, char ch);
 - δ^* acts on the a string, calling delta
 - state deltaStar(state q, string s);
- These functions are **one-to-one**.
 - However there can be states in Q that no one uses.
- For the transition graph in the PDF, here is the table.

$$\begin{array}{c|cccc} & 0 & 1 \\ \hline q_0 & q_0 & q_1 \\ q_1 & q_2 & q_1 \\ q_2 & q_2 & q_2 \end{array}$$