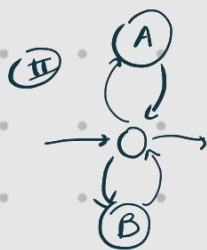
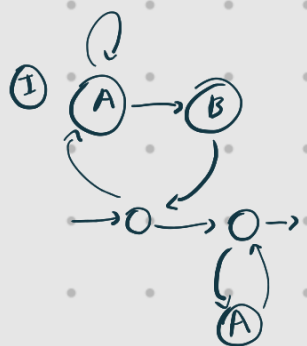


$$(A^*B)^*A^* = (A \cup B)^*$$



Exercício 2:

- Construa AFNDs para estas ERs
- Construa os sistemas de equações destes autômatos
- Mostre que ambos reconhecem a mesma linguagem

Exercício 1:



Qual é a linguagem aceita por este autômato?

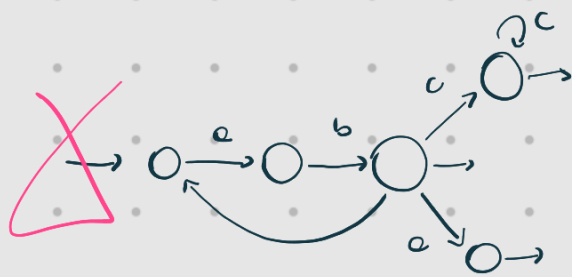
$$\begin{cases} X \supseteq aY \cup \epsilon Z \\ Y \supseteq bX \cup bZ \cup \epsilon \\ Z \supseteq cZ \cup \epsilon \\ L \supseteq X \end{cases}$$

$$L \supseteq X$$

$$\begin{aligned} X &\supseteq a(bX \cup bc^* \cup \epsilon) \cup c^* \\ &= abX \cup (abc^* \cup a \cup c^*) \\ &= (ab)^* (abc^* \cup a \cup c^*) \\ &= (ab)^* abc^* \cup \\ &\quad (ab)^* a \cup \text{dupla} \\ &\quad (ab)^* c^* \end{aligned}$$

$$L \supseteq (ab)^* (c^* \cup a)$$

Determinizar



$$\begin{cases} X \supseteq aY \cup \epsilon Z \\ Y \supseteq bX \cup bZ \cup \epsilon \\ Z \supseteq cZ \cup \epsilon \\ L \supseteq X \end{cases}$$

$$L \supseteq X$$

$$X \supseteq aY \cup cZ \cup \epsilon$$

$$Y \supseteq b(X \cup Z) \cup \epsilon$$

$$Z \supseteq cZ \cup \epsilon$$

$$X \cup Z \supseteq aY \cup cZ \cup \epsilon \cup cZ \cup \epsilon$$

Podemos simplificar para

$$L \supseteq X$$

$$X \supseteq aY \cup cZ \cup \epsilon$$

$$Y \supseteq bX \cup \epsilon$$

$$Z \supseteq cZ \cup \epsilon$$

