

P1

1.

$$A = aB$$

$$B = cB \cup bC$$

$$C = bA \cup aD \cup \epsilon$$

$$D = aC \cup \epsilon$$

$$C = bA \cup a(aC \cup \epsilon) \cup \epsilon$$

$$C = bA \cup aaC \cup a\epsilon \cup \epsilon$$

$$C = (aa)^*(bA \cup a\epsilon \cup \epsilon)$$

$$B = cB \cup b((aa)^*(bA \cup a\epsilon \cup \epsilon))$$

$$B = c^*b((aa)^*(bA \cup a\epsilon \cup \epsilon))$$

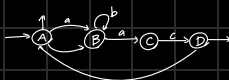
$$A = ac^*b((aa)^*(bA \cup a\epsilon \cup \epsilon))$$

$$A = ac^*b(aa)^*bA \cup (aa)^*a \cup (aa)^*$$

$$A = ac^*b(aa)^*bA \cup \underline{ac^*b(aa)^*a \cup ac^*b(aa)^*}$$

$$(ac^*b(aa)^*b)^*(ac^*ba^*)$$

2.



$$A = aB \cup B \cup \epsilon$$

$$B = bB \cup aC$$

$$C = cD$$

$$D = A$$

$$C = cA$$

$$B = bB \cup acA$$

$$A = a(bB \cup acA) \cup (bB \cup acA) \cup \epsilon$$

$$A = abB \cup aacA \cup bB \cup acA \cup \epsilon$$

$$A = a(bB \cup acA \cup cA) \cup bB \cup \epsilon$$

$$X = bB \cup acA \cup cA$$

$$Y = cA$$

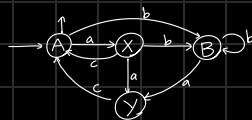
$$X = bB \cup aY \cup cA$$

$$A = aX \cup bB \cup \epsilon$$

$$B = bB \cup aY$$

$$X = bB \cup aY \cup cA$$

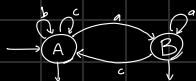
$$Y = cA$$



3.

a. não é regular! (explicação)

b.



$$A = bA \cup cA \cup aB \cup \epsilon$$

$$B = aB \cup cA \cup \epsilon$$

$$B = a^*cA \cup a^*\epsilon$$

$$A = bA \cup cA \cup a(a^*cA \cup a^*\epsilon) \cup \epsilon$$

$$A = bA \cup cA \cup aa^*cA \cup \underline{aa^*\epsilon \cup \epsilon}$$

$$A = (b \cup c \cup aa^*c)^*a^*$$