

2.14 Converta a seguinte GLC em uma GLC equivalente na forma normal de Chomsky, usando o procedimento dado no Teorema 2.9.

$$\begin{aligned} A &\rightarrow BAB \mid B \mid \varepsilon \\ B &\rightarrow 00 \mid \varepsilon \end{aligned}$$

$$S \rightarrow A$$

$$A \rightarrow BAB \mid B \mid \varepsilon$$

$$B \rightarrow 00 \mid \varepsilon$$

$$S \rightarrow A$$

$$A \rightarrow BAB \mid B \mid \varepsilon \mid BA \mid AB \mid BB$$

$$B \rightarrow 00$$

$$S \rightarrow A \mid \varepsilon$$

$$A \rightarrow BAB \mid B \mid BA \mid AB \mid BB$$

$$B \rightarrow 00$$

$$S \rightarrow A \mid \varepsilon$$

$$A \rightarrow BAB \mid 00 \mid BA \mid AB \mid BB$$

$$B \rightarrow 00$$

$$S \rightarrow BAB \mid 00 \mid BA \mid AB \mid BB \mid \varepsilon$$

$$A \rightarrow BAB \mid 00 \mid BA \mid AB \mid BB$$

$$B \rightarrow 00$$

$$S \rightarrow BAB \mid \eta\eta \mid BA \mid AB \mid BB \mid \varepsilon$$

$$A \rightarrow BAB \mid \eta\eta \mid BA \mid AB \mid BB$$

$$B \rightarrow \eta\eta$$

$$\eta \rightarrow 0$$

$$k \leq 2$$

$$S \rightarrow \overbrace{BT} \mid \eta\eta \mid BA \mid AB \mid BB \mid \varepsilon$$

$$A \rightarrow \overbrace{BT} \mid \eta\eta \mid BA \mid AB \mid BB$$

$$B \rightarrow \eta\eta$$

$$\eta \rightarrow 0$$

$$T \rightarrow AB$$

$$\begin{aligned} R &\rightarrow XRX \mid S \\ S &\rightarrow aTb \mid bTa \\ T &\rightarrow XTX \mid X \mid \epsilon \\ X &\rightarrow a \mid b \end{aligned}$$

$$S_0 \rightarrow R$$

$$R \rightarrow XRX \mid S$$

$$S \rightarrow aTb \mid bTa$$

$$T \rightarrow XTX \mid X \mid \epsilon$$

$$X \rightarrow a \mid b$$

$$S_0 \rightarrow R$$

$$R \rightarrow XRX \mid S$$

$$S \rightarrow aTb \mid bTa \mid ab \mid ba \mid \epsilon$$

$$T \rightarrow XTX \mid X \mid XX$$

$$X \rightarrow a \mid b$$

$$S_0 \rightarrow R$$

$$R \rightarrow XRX \mid S \mid \epsilon$$

$$S \rightarrow aTb \mid bTa \mid ab \mid ba$$

$$T \rightarrow XTX \mid X \mid XX$$

$$X \rightarrow a \mid b$$

$$S_0 \rightarrow R \mid \epsilon$$

$$R \rightarrow XRX \mid S$$

$$S \rightarrow aTb \mid bTa \mid ab \mid ba$$

$$T \rightarrow XTX \mid X \mid XX$$

$$X \rightarrow a \mid b$$

$$S_0 \rightarrow R \mid \epsilon$$

$$R \rightarrow XRX \mid S$$

$$S \rightarrow aTb \mid bTa \mid ab \mid ba$$

$$T \rightarrow XTX \mid a \mid b \mid XX$$

$$X \rightarrow a \mid b$$

$$S_0 \rightarrow R \mid \epsilon$$

$$R \rightarrow xRx \mid aTb \mid bTa \mid ab \mid ba$$

$$S \rightarrow aTb \mid bTa \mid ab \mid ba$$

$$T \rightarrow xTx \mid a \mid b \mid xx$$

$$x \rightarrow a \mid b$$

$$S_0 \rightarrow xRx \mid aTb \mid bTa \mid ab \mid ba \mid \epsilon$$

$$R \rightarrow xRx \mid aTb \mid bTa \mid ab \mid ba$$

$$S \rightarrow aTb \mid bTa \mid ab \mid ba$$

$$T \rightarrow xTx \mid a \mid b \mid xx$$

$$x \rightarrow a \mid b$$

$$S_0 \rightarrow xRx \mid zTw \mid wTz \mid zw \mid wz \mid \epsilon$$

$$R \rightarrow xRx \mid zTw \mid wTz \mid zw \mid wz$$

$$S \rightarrow zTw \mid wTz \mid zw \mid wz$$

$$T \rightarrow xTx \mid a \mid b \mid xx$$

$$x \rightarrow z \mid w$$

$$z \rightarrow a$$

$$w \rightarrow b$$

$$S_0 \rightarrow xC \mid zE \mid wD \mid zw \mid wz \mid \epsilon$$

$$R \rightarrow xC \mid zE \mid wD \mid zw \mid wz$$

$$S \rightarrow zE \mid wD \mid zw \mid wz$$

$$T \rightarrow Fx \mid a \mid b \mid xx$$

$$x \rightarrow z \mid w$$

$$z \rightarrow a$$

$$w \rightarrow b$$

$$C \rightarrow Rx$$

$$D \rightarrow Tz$$

$$E \rightarrow Tw$$

$$F \rightarrow xT$$

$$E \rightarrow E + T \mid T$$

$$T \rightarrow T \times F \mid F$$

$$F \rightarrow (E) \mid a$$

$$S \rightarrow E$$

$$E \rightarrow E + T \mid T$$

$$T \rightarrow T \times F \mid F$$

$$F \rightarrow (E) \mid a$$

$$S \rightarrow E$$

$$E \rightarrow E + T \mid T$$

$$T \rightarrow T \times F \mid (E) \mid a$$

$$F \rightarrow (E) \mid a$$

$$S \rightarrow E + T \mid T \times F \mid (E) \mid a$$

$$E \rightarrow E + T \mid T \times F \mid (E) \mid a$$

$$T \rightarrow T \times F \mid (E) \mid a$$

$$F \rightarrow (E) \mid a$$

$$S \rightarrow EIT \mid TJF \mid GEH \mid a$$

$$E \rightarrow EIT \mid TJF \mid GEH \mid a$$

$$T \rightarrow TJF \mid GEH \mid a$$

$$F \rightarrow GEH \mid a$$

$$G \rightarrow ($$

$$H \rightarrow)$$

$$I \rightarrow +$$

$$J \rightarrow \times$$

$$S \rightarrow EP \mid TD \mid GU \mid a$$

$$E \rightarrow EP \mid TD \mid GU \mid a$$

$$T \rightarrow TD \mid GU \mid a$$

$$F \rightarrow GU \mid a$$

$$G \rightarrow ($$

$$H \rightarrow)$$

$$I \rightarrow +$$

$$J \rightarrow \times$$

$$D \rightarrow TJ$$

$$P \rightarrow IT$$

$$U \rightarrow EH$$