

Chomsky Normal Form

EX1:

$S \rightarrow ASB$

$A \rightarrow aASA \mid a \mid \epsilon$

$B \rightarrow SbS \mid A \mid bb$

EX2:

$S \rightarrow a \mid aA \mid B$

$A \rightarrow aBB \mid \epsilon$

$B \rightarrow Aa \mid b$

EX3:

$S \rightarrow ASA \mid aB$

$A \rightarrow B \mid S$

$B \rightarrow b \mid \epsilon$

EX4:

$S \rightarrow aAD$

$A \rightarrow aB \mid bAB$

$B \rightarrow b$

$D \rightarrow d$

EX5:

$S \rightarrow 1A \mid 0B$

$A \rightarrow 1AA \mid 0S \mid 0$

$B \rightarrow 0BB \mid 1S \mid 1$

EX6:

$S \rightarrow ASA \mid aB,$

$A \rightarrow B \mid S,$

$B \rightarrow b \mid \epsilon$

EX7:

$S \rightarrow a B B B \mid b A A A$

$A \rightarrow a \mid A s \mid b B B$

$B \rightarrow b \mid b S \mid A a a$

EX8:

$S \rightarrow a B B B \mid b A A A$