

LMD, RMD - Examples.

① $S \rightarrow AB$
 $A \rightarrow aA|a$
 $B \rightarrow bB|b$

(a) $w = abb$

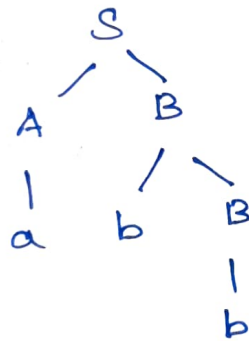
LMD:

$$\begin{aligned} S &\rightarrow AB \\ &\downarrow \\ a &B \\ &\downarrow \\ ab &B \\ &\downarrow \\ abb \end{aligned}$$

RMD:

$$\begin{aligned} S &\rightarrow AB \\ &\rightarrow A \downarrow B \\ &\rightarrow A b \downarrow B \\ &\rightarrow \downarrow \\ &\rightarrow abb \end{aligned}$$

Derivation Tree:



(b) $w = aaabb$

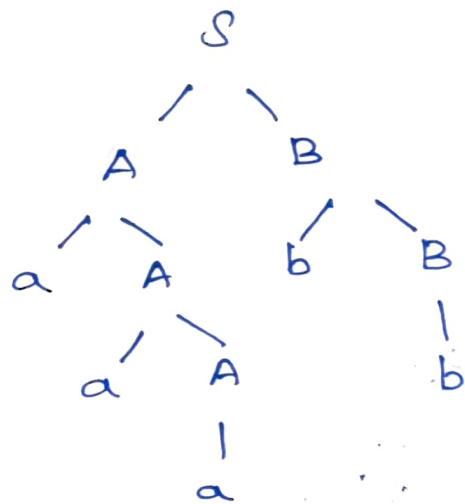
LMD:

$$\begin{aligned} S &\rightarrow \underline{A} B \\ &\rightarrow a \underline{A} B \\ &\rightarrow aa \underline{A} B \\ &\rightarrow aaa \underline{A} B \\ &\rightarrow aaab \underline{B} \\ &\rightarrow aaabb \end{aligned}$$

RMD:

$$\begin{aligned} S &\rightarrow A \underline{B} \\ &\rightarrow A b \underline{B} \\ &\rightarrow \underline{A} bb \\ &\rightarrow a \underline{A} bb \\ &\rightarrow aa \underline{A} bb \\ &\rightarrow aaabb \end{aligned}$$

Derivation Tree



② $S \rightarrow asa | bsb | aa | bb | a | b$

$w = ababab$

$S \rightarrow a \underline{s} a$
 $\rightarrow ab \underline{s} ba$
 $\rightarrow ababab$

$S \rightarrow a \underline{s} a$
 $\rightarrow ab \underline{s} ba$
 $\rightarrow ababab$

