

$$G: \quad S \rightarrow aS \mid b$$

$$= \{ b, ab, \underline{aab}, aaab, \dots \}$$

$$L = \{ a^{(m)}b \mid m \geq 0 \}$$

$$X^0 = \Sigma$$

$$X^1 = X$$

$$X^2 = XX$$

⋮

$$X^m = \underbrace{X \dots X}_{m \text{ volte}}$$

$$\underline{S \rightarrow AB} \quad A \rightarrow aAbb \mid abb$$

$$B \rightarrow bBc \mid bc$$

(A) abb
 aabb

~~aaabbb~~
oobbbb

$$L(A) = \{ a^m b^{2m} \mid m > 0 \}$$

② bc
bbcc
bbbccc

$$L(B) = \{ b^m c^m \mid m > 0 \}$$

\hookrightarrow A B

$$\begin{array}{ccc} \downarrow & \downarrow & \\ aAb & bBc & = \quad abbcc \end{array}$$

$$\begin{array}{ccc} \downarrow & \downarrow & \\ oobbbb & bbcc & = \quad oa bbbb bbcc \end{array}$$

abb bBc

$$abb \cdot bbcc = obbbbcc$$

$$\underline{a^m b^{2m}} \cdot \underline{b^m c^m} = \left\{ a^m b^{2m+m} c^m \mid m > 0, m > 0 \right\}$$

$$L(G) = \{ a^m b^5 c^m \mid m, m > 0 \}$$

$$J = 2m + m$$

$$\begin{array}{ccc} a^m b^{2m} & b^m c^m & \\ \downarrow & \downarrow & \\ A & B & \end{array}$$

$$S \rightarrow AB$$

$$S \rightarrow AXB$$

$$A \rightarrow \epsilon Ab \mid \epsilon b$$

$$A : \{ a^m b^m \mid m > 0 \}$$

$$X \rightarrow bX \mid b$$

$$X : \{ b^m \mid m > 0 \}$$

$$B \rightarrow bBa \mid ba$$

$$B : \{ b^j a^j \mid j > 0 \}$$

$$A \cdot X \cdot B = a^m b^m \cdot b^m \cdot b^j a^j$$

$$= a^m b^{m+m+j} a^j$$

$$L(G) = \left\{ a^m b^{m+j+m} a^j \mid \begin{array}{l} m > 0 \\ m > 0 \\ j > 0 \end{array} \right\}$$

$$\left\{ a^m b^k a^j \mid m > 0 \right\}$$

$$\left. \begin{array}{l} \{ a^m \mid m \geq 0 \} \\ J > 0 \\ K > m + J \\ K \geq 3 \end{array} \right\}$$

$$L = \left\{ a^u \mid u = 2k, k \geq 1 \right\}$$

$$= \left\{ a^{2k} \mid k \geq 1 \right\} = \left\{ a^{2k} \mid k > 0 \right\}$$

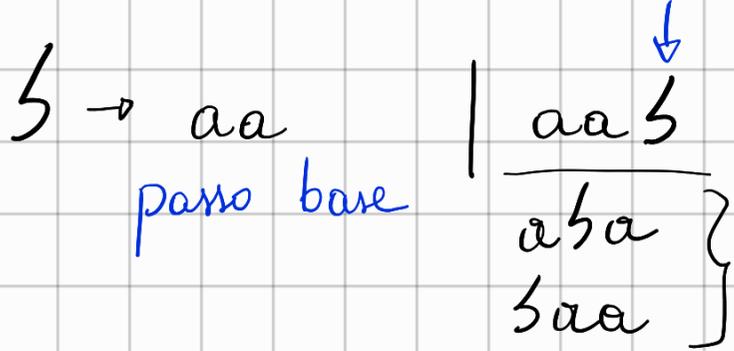
$$= \left\{ \underset{2}{aa}, \underset{4}{aaaa}, \underset{6}{aaaaaa}, \dots \right\}$$

min #(a) = 2

#(a) = 2k

| *vincoli*

↓ *ricorrenza*



$$L = \left\{ a^{\textcircled{m}} b^{2\textcircled{m}} \mid \underline{m \geq 0} \right\}$$

$$= \left\{ abb, aebbbb, seobbbbb, \dots \right\}$$

$m = 1$
 $m = 2$
 $m = 3$

Vincolo: per ogni a, e sono esattamente

due b

1 a : k b

$$S \rightarrow abb \mid aSbb$$

$$aS \underbrace{b \dots b}_{k \text{ volte}}$$

$$S \rightarrow \lambda \mid aSbb$$

$$S \underbrace{b \dots b}_{k \text{ volte}}$$

$$L = \{ a^m b^k e^m \mid m > 0, \underline{m} > 0, k \underline{> m+m} \}$$

$$= \{ \underline{abbbbc}, \underline{aabb bbbbc}, \sigma bbbbbc \dots \}$$

$$= \left\{ a^m b^{m+\pi+m} e^m \mid \begin{array}{l} m > 0 \\ m > 0 \\ \pi > 0 \end{array} \right\}$$

$$= \left\{ a^m b^{m+\pi+m} e^m \mid \begin{array}{l} m > 0 \\ m > 0 \\ \pi > 0 \end{array} \right\}$$

$$\rightarrow \underbrace{a^m b^m}_{A} \cdot \underbrace{b^\pi}_{B} \cdot \underbrace{b^m e^m}_{C}$$

$$S \rightarrow ABC$$

$$A \rightarrow ab \mid aAb$$
$$B \rightarrow b \mid bB$$
$$C \rightarrow bc \mid bCc$$



