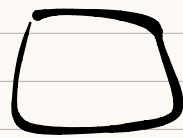
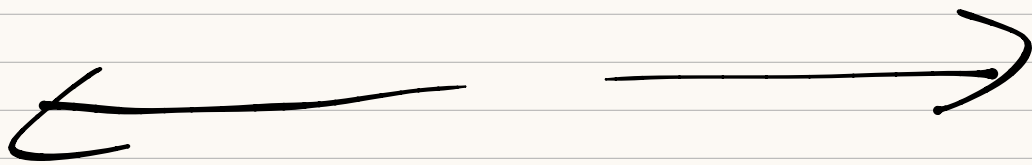


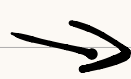
L R D



(D O L B O)



TM_{SINGOLO}

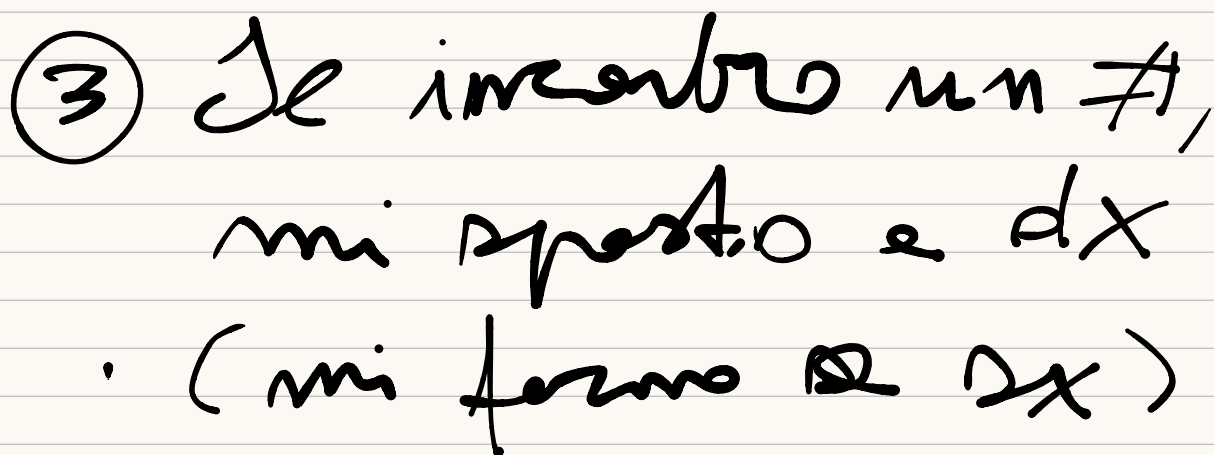


TM_{AIN.}

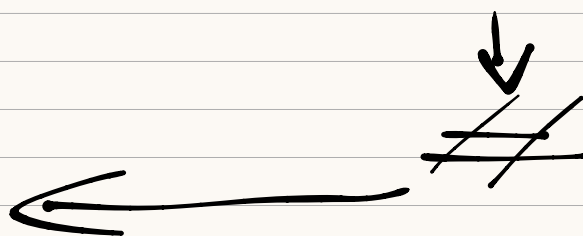
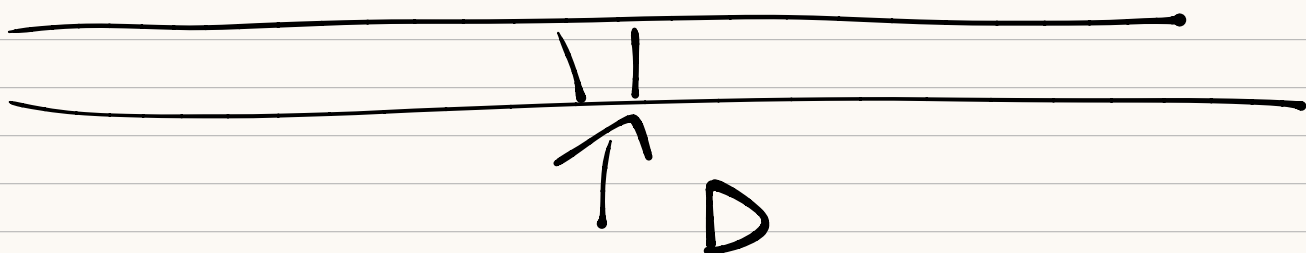
$$\sigma(q, a) = (r, b, L)$$

① M scrive "b" sul
nastro

② Isposta di 1 e Δx



(S NESSA COSA DI DX)


$$-g(q, e) = (r, b, D)$$


- Sortitiones can \neq

. . . .

→ Mi sposti a dx

→ Se arrivi all'ultimo #
(fermati)

Se raggiungi l'accept

→ accetta

$TM_{SING.} \rightarrow TM_{MAIN.}$

$[L, R] \rightarrow [L, R] \oplus \uparrow$

↓ LBT-RUSSET

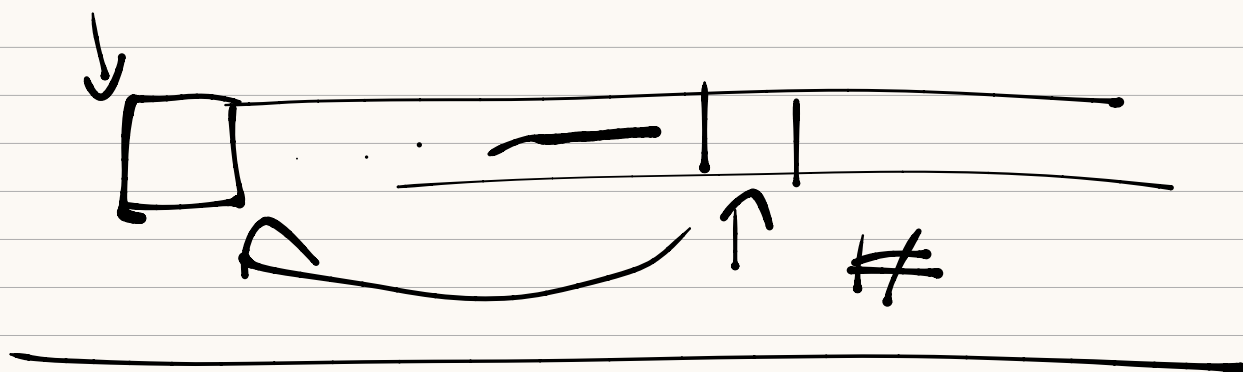
$$- \delta(q, a) = (r, \perp, L)$$

(SING. \rightarrow LR)

$$- \delta(q, a) = (r, \perp, R)$$

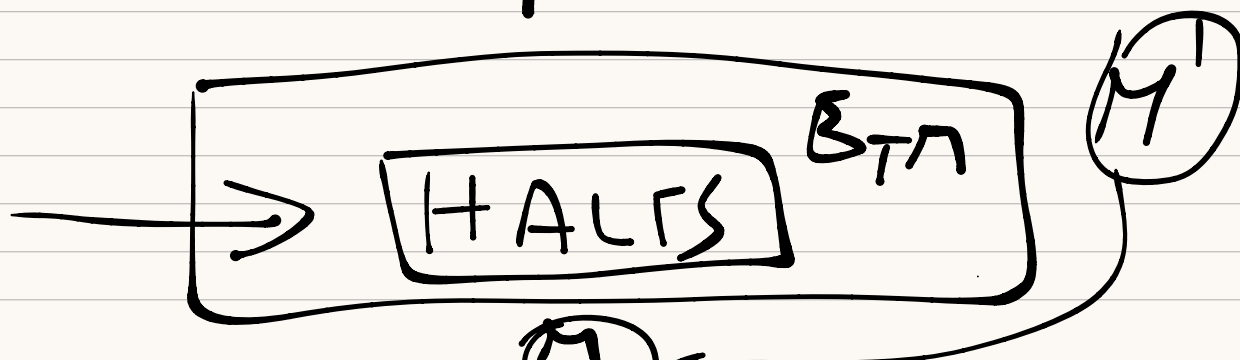
(SAND)

$$- \delta(q, a) = (r, b, R_{\text{next}})$$



$$E_{TM} \leq_m \text{HALTS}$$

$$F = \text{an input } \langle M, w \rangle$$



$$E_{TM} \rightarrow \Sigma^* = \emptyset$$

$M' \rightarrow M$ su input w

- Se M accetta, w in L_{acc}
- Se M rifiuta, w in L_{acc}

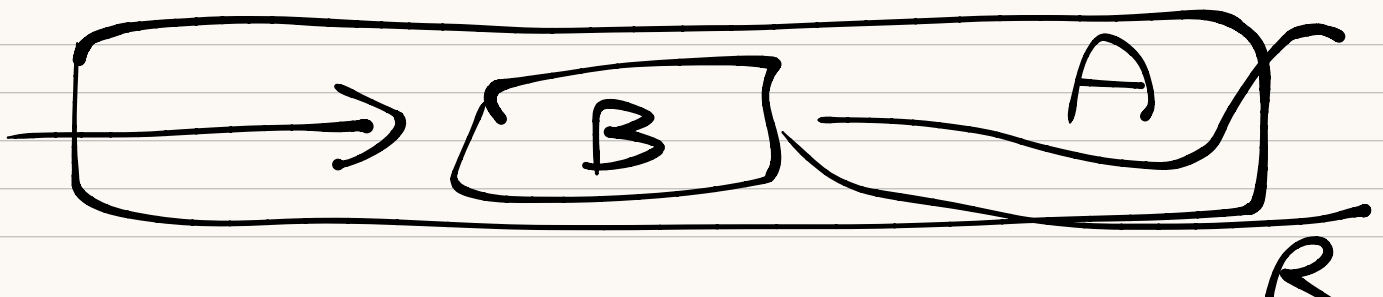
Riferimento $\langle M' \rangle$

INDECIDIBILITÀ

$$A \leq_m B$$

INDUC.

DIPIOSRA,
CHSLOB



DECIDIBILITÀ

$$A \leq_m B$$



RISOLVIBILE



DSC

$(HS \in DSC)$

$$\langle M, w \rangle \in B_m \text{ se e solo se } M \in I$$

$$E_m \leq_m USSLSS_m$$



$$USOLBSS_{TM} = \{ \langle M \rangle \mid$$

M è una TM con uno
stato dove $w \neq \emptyset \}$

$$\left[E_{TM} \leq_M USOLBSS_{TM} \right]$$

$F =$ In input $\langle M, w \rangle$

costruire M'

$M' =$ In input x

se $\forall x, w \neq \emptyset$

- se M accetta, accetta

\Rightarrow $\exists M$ rifiuta, (no in lang)

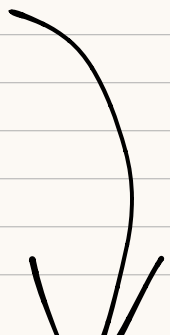
Riferimento (M') rifiuta

A in $\leq n$ USUBSS_{TM}

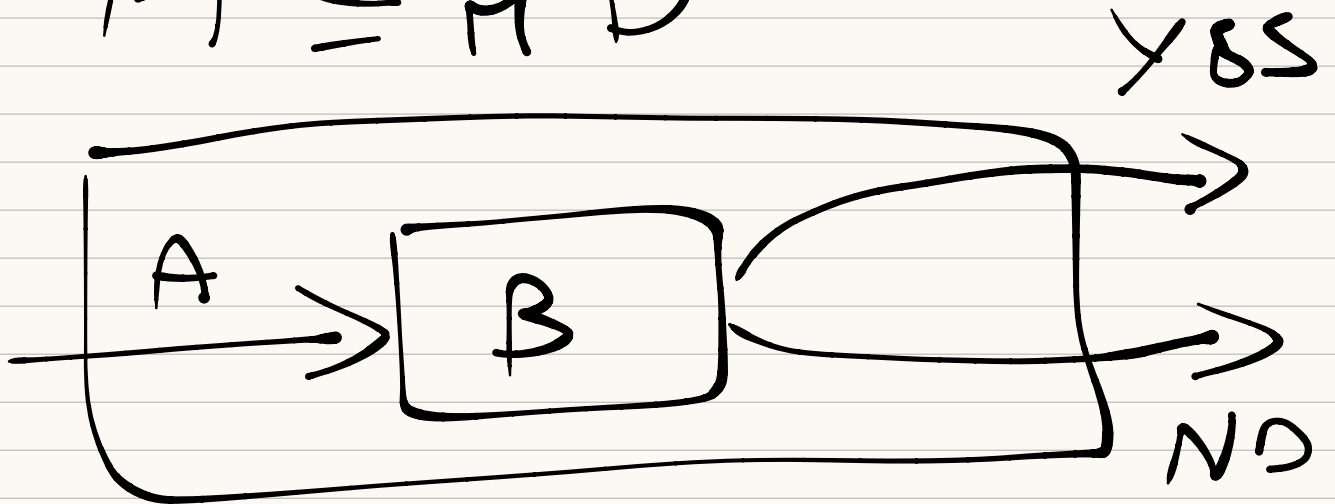
$\exists M$ accetta, rifiuta

$\exists M$ rifiuta, no in lang

$A \in_{TM} = \{ \langle M \rangle \mid M \text{ is} \\ \text{a TM accepting } \varepsilon \}$



$$A \leq_m B$$



DECIDIBLE "L"



TM that accepts L

COMPLEMENT DFA

$= \{ A, B \text{ on } L_1, L_2$

$L_1 = \overline{L_2} \}$

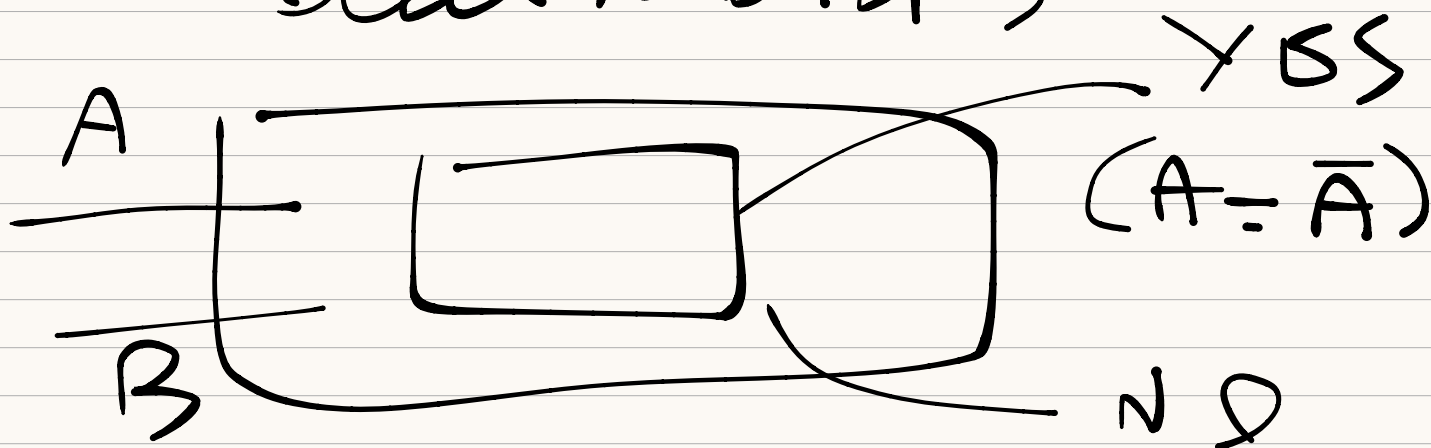
COMPONENT DATA

$= \{ A, B \text{ on } L_1, L_2$
 $L_1 = \overline{L_2} \}$

TM $M_1(A)$

TM $M_2(B)$

(eseguiti come
decidibili)



Controlli che $\forall w \in A$

↓
≠ ✓ WGB

↓
ACCETTA

else RIFIUTA

↓
CHIUSI PER

COMPLETAMENTO

↓
ALLORA DECIDI!

(LOGICA)

Decidibili

$A_{DFA} / A_{NFA} / A_{Reg}$

W oculto

Σ_{DFA} / EQ_{DFA}

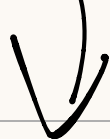
$X \leq \pi$ A_{DFA}

\rightarrow DEC.

Indecidibili

$A_{TM} / \overline{A_{TM}} / \Sigma_{TM} / \overline{\Sigma_{TM}}$

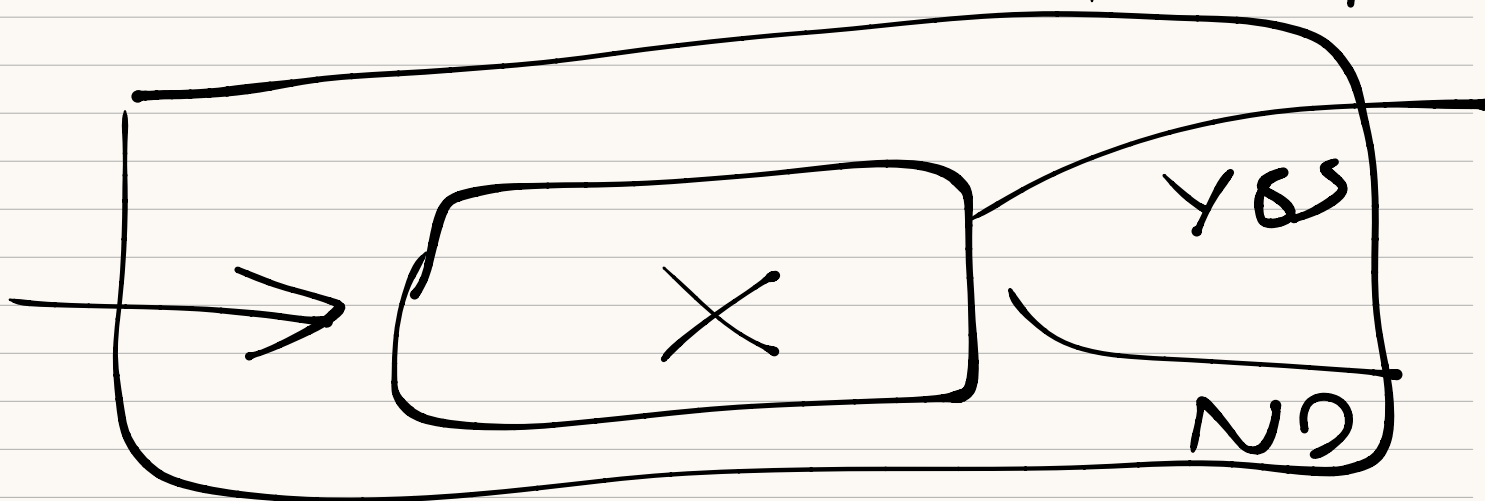
$EQ_{TM} / \overline{EQ_{TM}}$



$$A \cap \Sigma^* \leq \Sigma^* \quad \times$$

IND DEC.

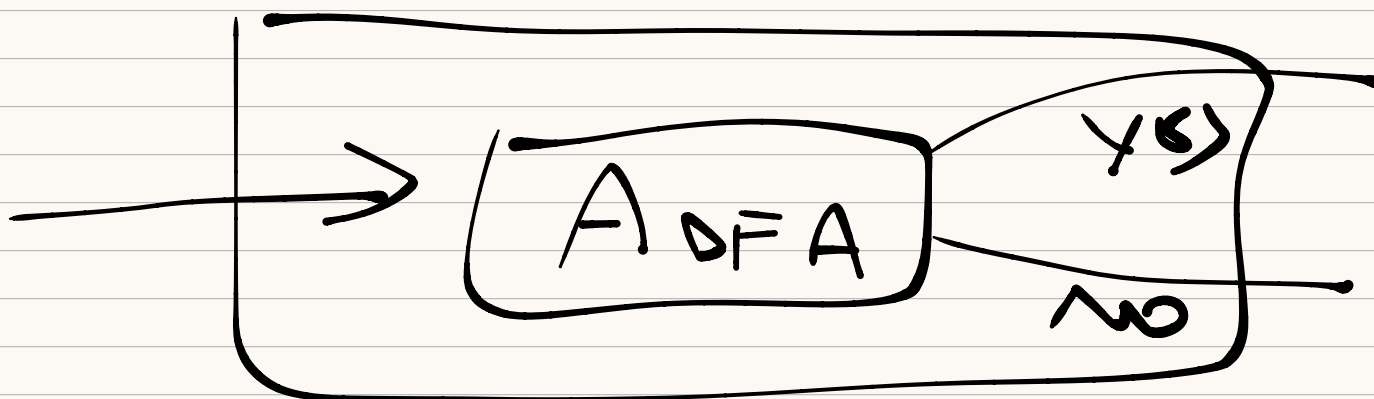
ATM



$$X \leq \Sigma^* \quad \text{ADFA}$$

DEC.

\times



$$\textcircled{A} \subseteq \textcircled{B}$$

SIPSEOR

