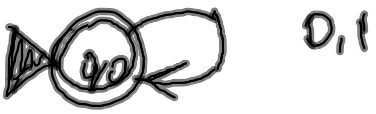
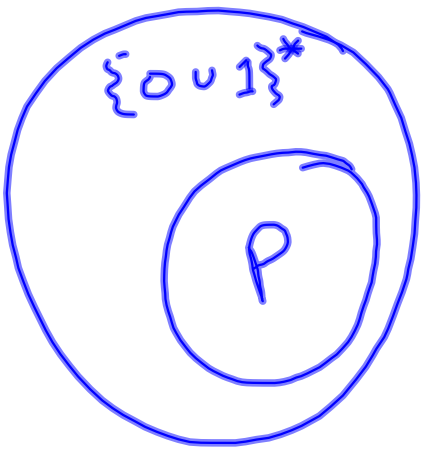
$P \cup L(\{0 \cup 1\}^*)$

$L(\{0 \cup 1\}^*)$ is language that accepts every possible string over the alphabet. P is a subset of $L(\{0 \cup 1\}^*)$ and we can build a NFA that recognizes L





if A is not regular
then $\overline{A}$ is not regular.

Suppose A is not regular and $\overline{A}$ is regular. $\quad \sim(p \to q)$

~~$\sim p \wedge q$~~

so $\overline{\overline{A}}$ is regular (by thm) $\quad \sim(\sim p \vee q)$

so A is regular $\times\!\!\times$ $\quad p \wedge \sim q$

T.M.
accepts all $s \in L$

is a recognizer for L

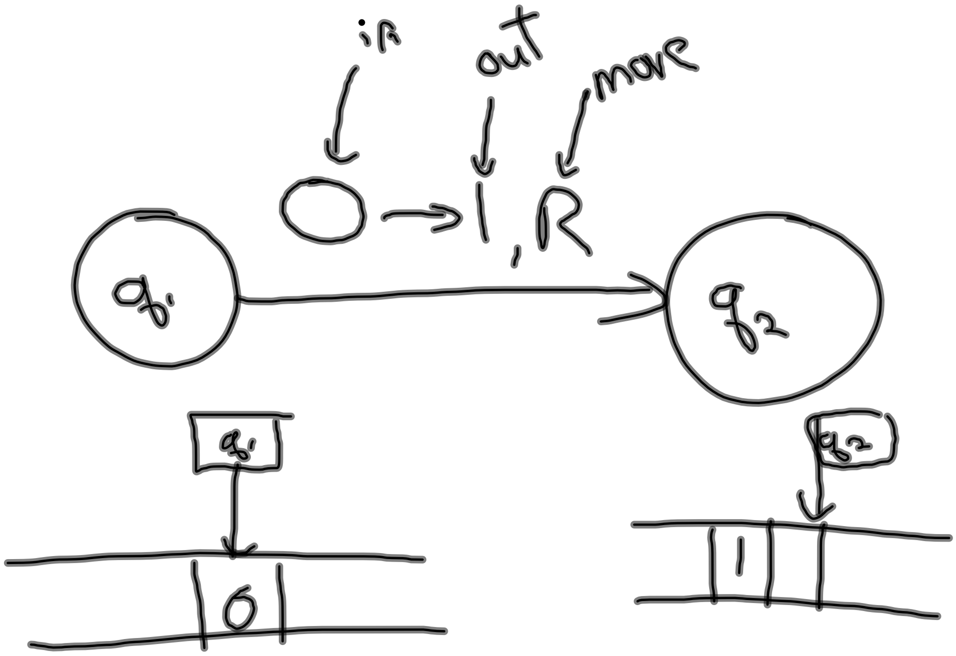
so L is Turing recognizable

accept
reject
run

T.M that recognizes L
and halts on all input
is a decider for L

so L is Turing decidable

accept
reject



$$x \to R \equiv x \to x, R$$

$$0,1 \to R \equiv \begin{cases} 0 \to 0, R \\ 1 \to 1, R \end{cases}$$

Jflap

- tape : 2 way ∞
- moves : L, R, S

$$L = \{ w\#w \mid w \in \{0,1\}^* \}$$

$\cancel{0}11\#\cancel{0}11$