Theory of Computation, CSCI 438 spring 2022
Undecidability, 201-202, April 8

Recall:
A_{DFA} = {<D,w> | D is a DFA, w is a string in the language of D, and w$\in \mathcal{L}$ (D)} is decidable. (Acceptance problem for DFAs)

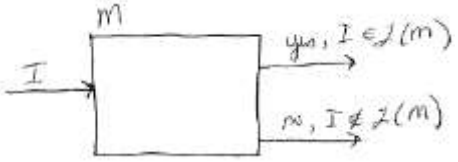
A_{NFA} = {<D,w> | D is an NFA, w is a string in the language of NFA and w$\in \mathcal{L}$ (D)} } is decidable. (Acceptance problem for NFAs)

A_{CFG} = {<G,w> | G is a CFG, w is a string in the language of G, and and w$\in \mathcal{L}$ (G)} is decidable. (Acceptance problem for CFG)

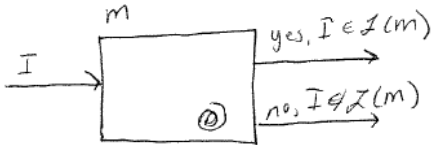
How about: A_{Reg}, A_{PDA}?

Can draw machines as boxes, showing the inputs and outputs.

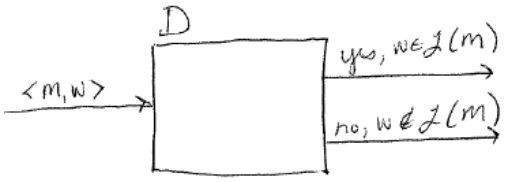
Example, any decider:



Example, any recognizer:



Example, decider for an acceptance problem for some class of machines:



Is A_{TM} = {<M, w> | M is a TM, w is a string in the alphabet of the TM and w$\in \mathcal{L}$ (M)} decidable? (I.e. is the acceptance problem for TM decidable?)
Can draw machines as boxes, showing the inputs and outputs.