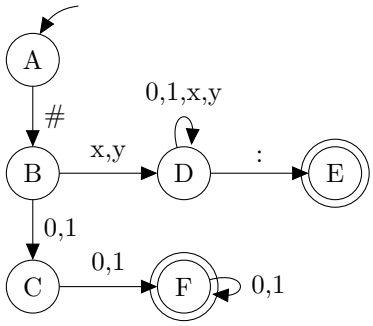
CS 406 Discrete Mathematics 2

Homework - Deterministic Finite Automatons

1 . Given is the following DFA M in terms of a drawing.



(a) Are the following strings accepted by M? Explain.

input	accepted	reason
#0		
#000		
#x11:		
#y0000		
#yx#:		
xy:		
ε		
#xy00xy:		

(b) How many transitions (edges) does M have?

(c) How many initial states does M have?

(d) Write down the alphabet Σ that is used by M.

(e) Write down the transition table for M.

(f) What is the value of $\delta(\mathrm{C}, :)$?

(g) Evaluate the recursive transition function $\hat{\delta}$ for input string #x0y: .

(h) Write down M in terms of mathematical set and tuple notation.