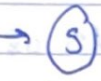
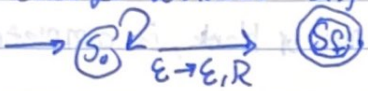
Homework 7

1. a) Turing machine has no final stage

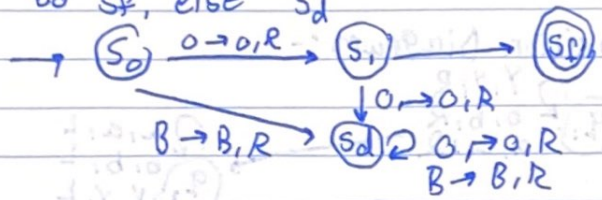


, It's an empty set therefore no other transition.

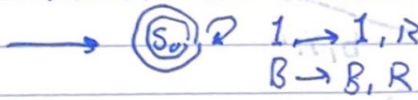
b) It is an empty string which means zero length and can change without any input.



c) 0 moves it to S_1, if NULL is received it moves to S_f, else S_d



d) Accepts all 1's and Epsilon, starts in finalstate



a)

2. For this question we can assume "X" for the first y and "y" for the second y.
In this language there is equal amounts of a's and b's
Assume w to be "abab". It will replace 'a' with "X" and continue moving until it finds 'a' again, and the process for 'b' and "Y".
It will iterate until it hits null or blank, it completes all elements and reaches "halt stage".
This function works for all possibilities of {aaaaa, bbbb, abab, baba}

b) Transition Diagram :-