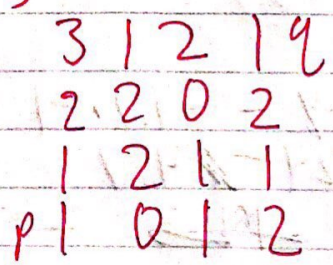
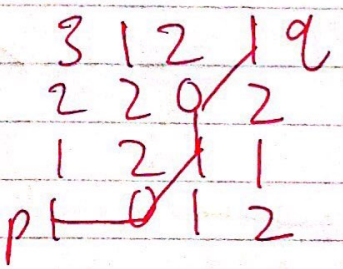
1) a) No b) Yes c) Yes

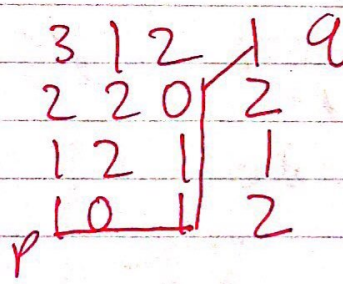
2) a) $V=\{0,1\}$



4-adj: NO because the final 1 1 next to q is not 4 adj to any 0 or 1



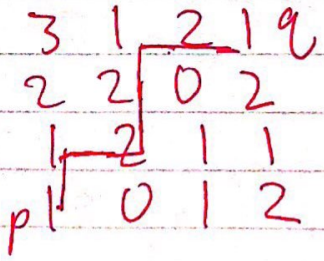
8-adj yes with 4 lines



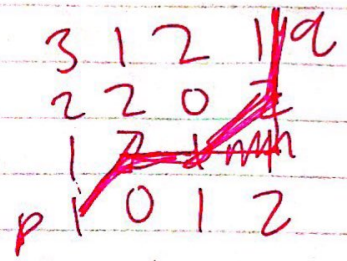
m-adj yes

5 lines

b) $V=\{1,2\}$

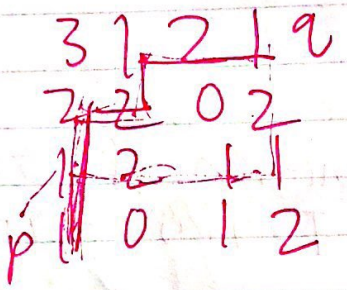


4-adj with 6 lines yes



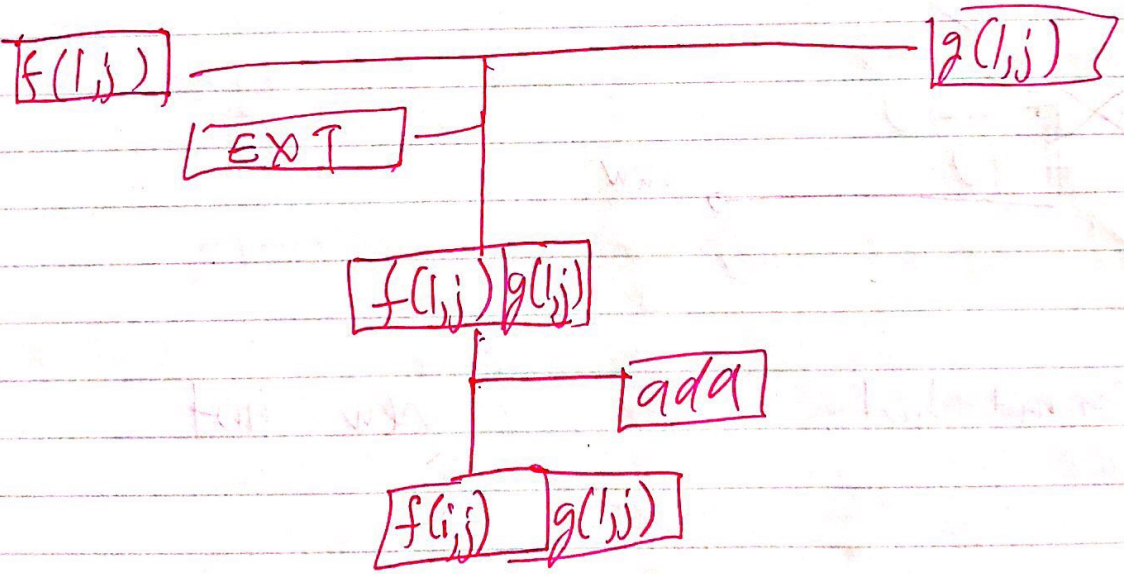
8-adj yes with 4 lines

b) $V = \{1, 2, 3\}$



madj - ves 5 lines

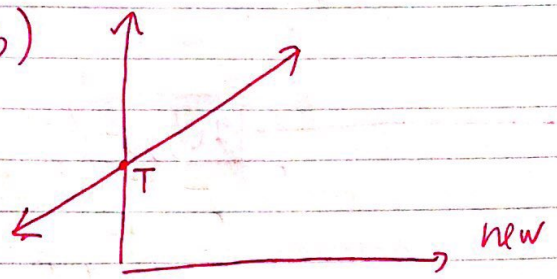
3) a)



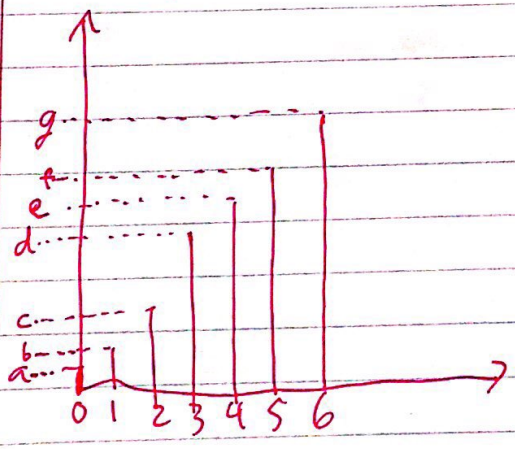
b) $\begin{bmatrix} * & 2 & 4 \\ 3 & 8 & 7 \\ * & -2 & * \end{bmatrix}$

4) a) transformation function if $f(x)=y$ is the original func. then after sliding T it is $f(x+T)=y$

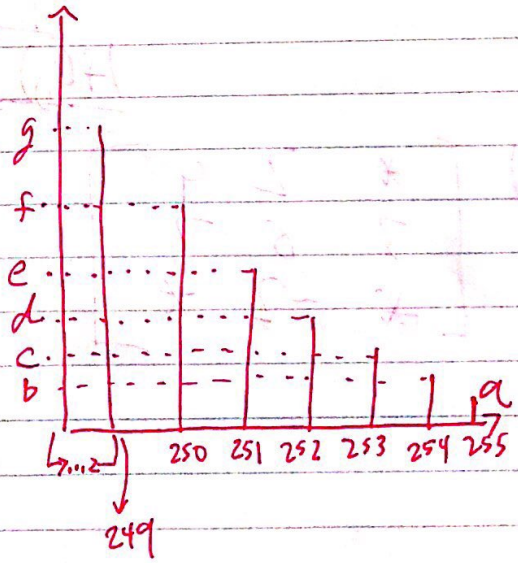
b)



5) original hist



new hist



transformation $255-x=y$