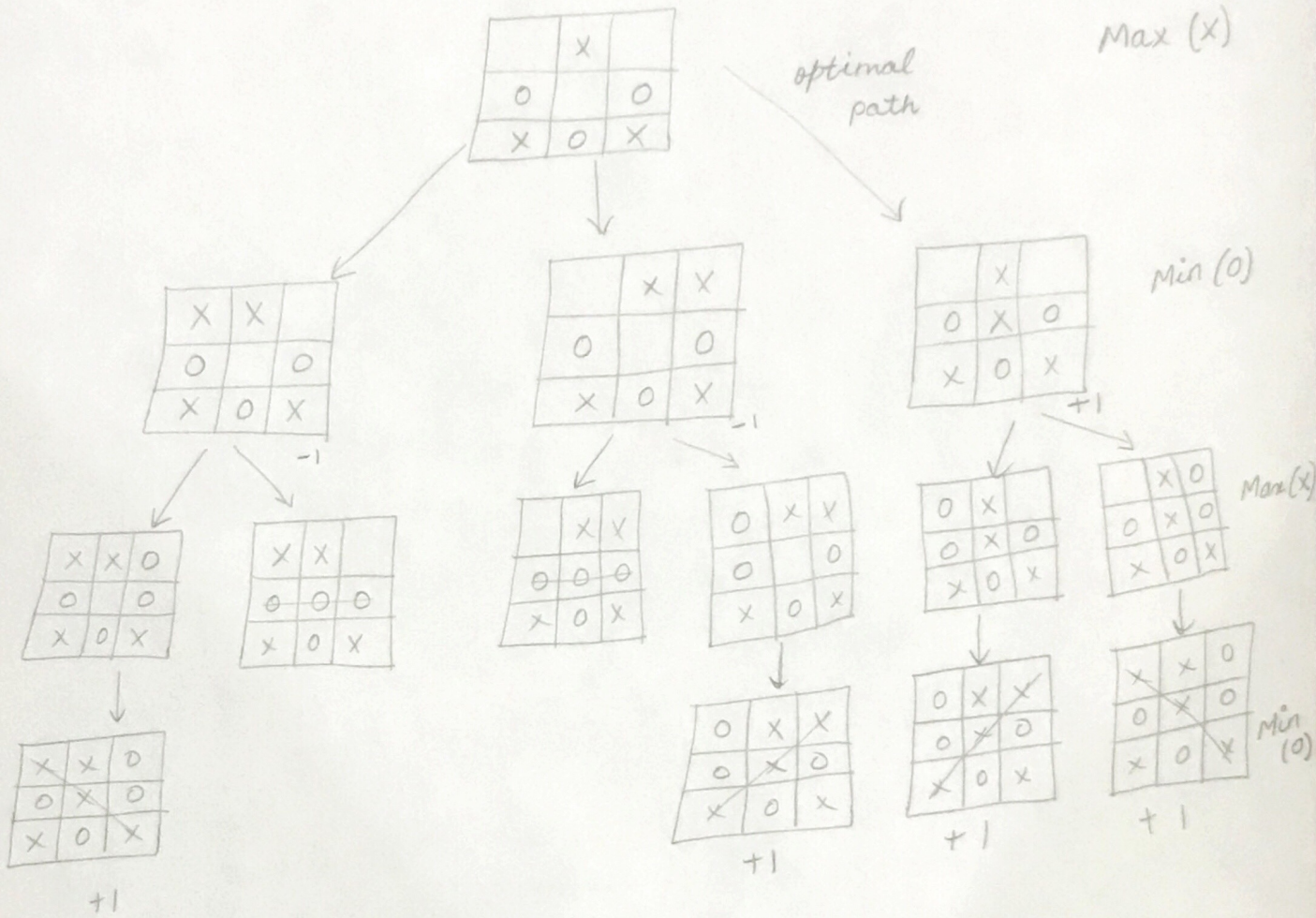
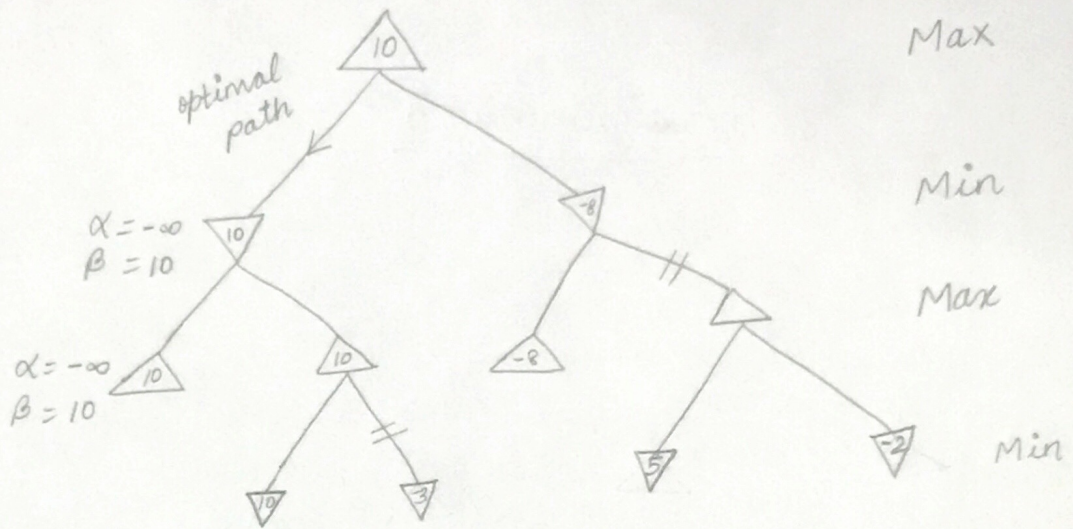


Assignment - 3Question - 1)

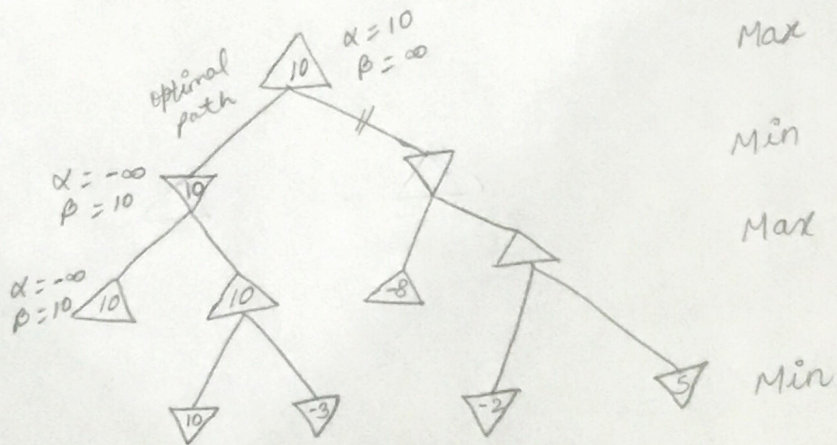
Question-2)

(a)



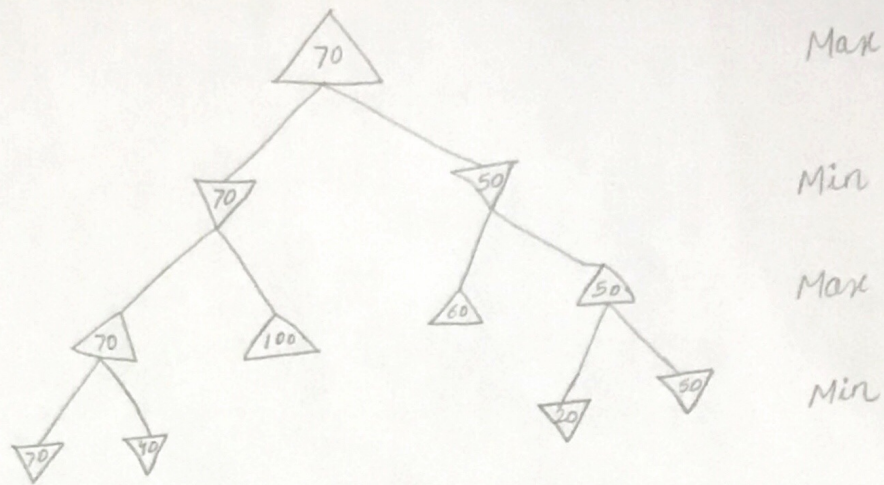
where "=" indicates that the node is not visited

- (b) Maximum utility value is 10 so, maximum node will stop exploring once it finds 10. It will not explore the other node even if it has higher value.



Question-3)

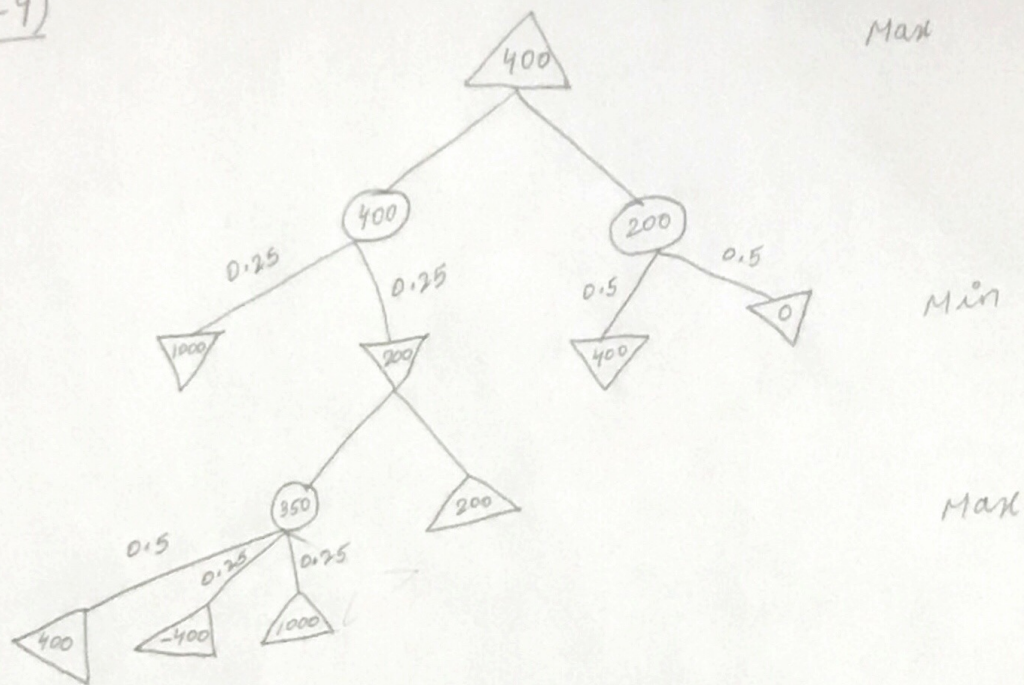
(2)



If a player uses different algorithm than MINMAX algorithm then MAX player will have the best possible outcome as 100.

If a player uses MINMAX algorithm then the MAX player will have the worst case with value of 70.

Question-4)



where "O" = $\left(\sum_{i=0}^n (\text{chance} \times \text{utility value}) \right)$ of all child nodes.

Question-5)

function minimax (state, α , β) return C

C - lowest value passed to child nodes

if n is terminal state

return utility value of n

else if n is max then

$g \leftarrow -\infty$

for a & s in DeepGreenMove (state)

$C \leftarrow \max (C, \text{minimax}(\text{state}, \alpha, \beta))$

if $C < \beta$ then $\alpha \leftarrow \max (\alpha, f)$

else return C

else

$g \leftarrow -\infty$

for a & s in DeepGreenMove (state)

$C \leftarrow \min (C, \text{minimax}(\text{state}, \alpha, \beta))$

if $C > \alpha$ then $\beta \leftarrow \max (\beta, f)$

else return C

return C