Homework 2- Artificial Intelligence

Problem 2

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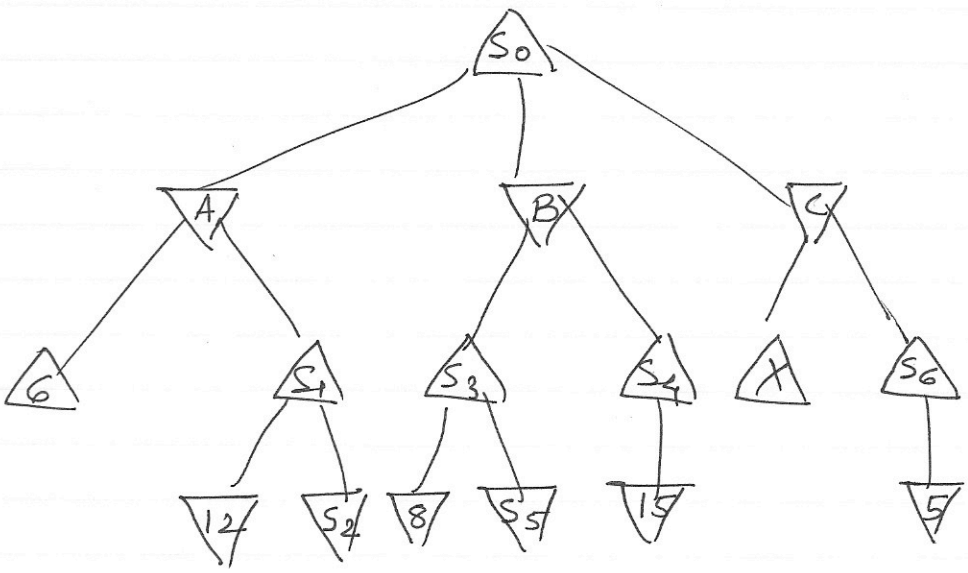
△ - max

▽ - min



Consider △ as "max" and ▽ as "min".

By minimax procedure, DFS proves A = 6 so S_1 requires to be greater or equal to 6.

By traversing children of S_1, we can perform a β cut on its right child since current vertex V = 12 and β = 6 ⇒ V ≥ β.
So S_1 = 12 & out of 6 & 12, 12 is greater hence
A = 12

Similarly for B ⇒
S_4 = 15 & S_3 requires to be 8 or lower.
Since S_3 will 8 or lower S_4 = 15 is greater than S_3 so **B = 15**

S3 and S4 are max nodes and since S3 is 8 or lower, B is 15.

For C ⇒

$S_6 = 5$ so X requires to be greater o equal to 5 for C = X.

So lowest value of X can be 5
Since A, B, C are "min" nodes and A = 12 B = 15, X requires to be less or equal to 12, by which sub-trees in A & C ca be pruned.

So X can be of minimum value 5 and maximum value 12