import math

def minimax(curDepth, nodeIndex, maxTurn, scores, targetDepth):

if curDepth == targetDepth:

return scores[nodeIndex]

if maxTurn:

return max(

minimax(curDepth + 1, nodeIndex \* 2, False, scores, targetDepth),

minimax(curDepth + 1, nodeIndex \* 2 + 1, False, scores, targetDepth)

)

else:

return min(

minimax(curDepth + 1, nodeIndex \* 2, True, scores, targetDepth),

minimax(curDepth + 1, nodeIndex \* 2 + 1, True, scores, targetDepth)

)

scores = [3, 5, 2, 9, 12, 5, 23, 23]

treeDepth = int(math.log(len(scores), 2))

print("The optimal value is: ", end ="")

print(minimax(0, 0, True, scores, treeDepth))