#TASK 1

import math

import random

st\_id = input("Enter your student ID: ")

rr, a, b, d, val = int(st\_id[4]), int(st\_id[6]), int(st\_id[7]), int(st\_id[3]),[]

RR = int(rr)

r\_a, r\_b = str(a), str(b)

rx = int(r\_b + r\_a)

RX=int(int(rx) \* 1.5)

def minMax(n, ra\_idx, gg, val, r\_l, r\_t):

if n == 3:

return val[ra\_idx]

if gg:

rst = RR

for i in range(0,2):

value = minMax(n+1, ra\_idx\*2+i, False, val, r\_l, r\_t )

rst = max(rst, value)

r\_l = max(r\_l, rst)

if r\_t <= r\_l:

break

return rst

else:

rst = RX

for i in range(0,2):

value = minMax(n+1, ra\_idx\*2+i, True, val, r\_l, r\_t)

rst = min(rst, value)

r\_t = min(r\_t, rst)

if r\_t <= r\_l:

break

return rst

for i in range(8):

e = random.randint(RR, RX)

val.append(e)

print("Generated 8 random points between the minimum and maximum point limits:", val)

print("Total points to win:", rx)

print("Achieved point by applying alpha-beta pruning =", minMax(0,0,True, val,RR,RX))

if minMax(0,0,True,val,RR,RX) >= rx:

print("The winner is Optimus Prime")

else:

print("The winner is Megatron")

print()

#TASK 2

print("After the shuffle: ")

l, c = [],[]

for i in range(len(d)):

random.shuffle(val)

r = minMax(0,0,True, val, RR, RX)

l.append(r)

print("List of all points values from each shuffles:", l)

for i in l:

if i >= rx:

c.append(i)

def bigger(array, e):

max = array[0]

for i in range (1, e):

if array[i] > max:

max = array[i]

return max

e = len(c)

final\_rst = bigger(c, e)

print("The maximum value of all shuffles:", final\_rst)

print(r"Won {e} times out of {d} number of shuffles")