Мячик на лесенке

n = int(input())  
dp = [0 for i in range(50)]  
  
dp[0] = dp[1] = 1  
dp[2] = 2  
  
for i in range(3, n + 1):  
 dp[i] = dp[i - 1] + dp[i - 2] + dp[i - 3]  
print(dp[n])

# Платная лестница

n = int(input())  
  
cost = [0] + [int(x) for x in input().split()]  
dp = [0 for i in range(200)]  
  
dp[0] = cost[0]  
dp[1] = cost[1]  
  
for i in range(2, n + 1):  
 dp[i] = cost[i] + min(dp[i - 1], dp[i - 2])  
print(dp[n])

# Калькулятор

n = int(input())  
  
dp = [0 for i in range(n + 1)]  
parent = [0 for i in range(n + 1)]  
  
for i in range(2, n + 1):  
 dp[i] = dp[i - 1]  
 parent[i] = i - 1  
 if i % 2 == 0 and dp[i] > dp[i // 2]:  
 dp[i] = dp[i // 2]  
 parent[i] = i // 2  
 if i % 3 == 0 and dp[i] > dp[i // 3]:  
 dp[i] = dp[i // 3]  
 parent[i] = i // 3  
 dp[i] += 1  
print(dp[n])  
ans = []  
v = n  
while parent[v] != v:  
 ans.append(v)  
 v = parent[v]  
print(\*ans[::-1])

# Количество маршрутов в прямоугольной таблице

n, m = map(int, input().split())  
dp = [[0] \* m for i in range(n)]  
  
for i in range(m):  
 dp[0][i] = 1  
for i in range(n):  
 dp[i][0] = 1  
for i in range(1, n):  
 for j in range(1, m):  
 dp[i][j] = dp[i - 1][j] + dp[i][j - 1]  
print(dp[-1][-1])

# Гирьки

n = int(input())  
arr = [0] + [int(x) for x in input().split()]  
if sum(arr) % 2 == 0:  
 W = sum(arr) // 2  
 dp = [[-1] \* (W + 1) for i in range(len(arr))]  
 dp[0][0] = 0  
 for i in range(1, len(arr)):  
 wi = arr[i]  
 for j in range(W + 1):  
 dp[i][j] = dp[i - 1][j]  
 if j - wi >= 0 and dp[i - 1][j - wi] != -1:  
 dp[i][j] = max(dp[i][j], dp[i - 1][j - wi] + 1)  
 if dp[-1][-1] != -1:  
 print(**'YES'**)  
 else:  
 print(**'NO'**)  
else:  
 print(**'NO'**)

# Рюкзак

W, n = map(int, input().split())  
arr = [0] + [int(x) for x in input().split()]  
dp = [[-1] \* (W + 1) for i in range(len(arr))]  
dp[0][0] = 0  
for i in range(1, len(arr)):  
 wi = arr[i]  
 for j in range(W + 1):  
 dp[i][j] = dp[i - 1][j]  
 if j - wi >= 0 and dp[i - 1][j - wi] != -1:  
 dp[i][j] = max(dp[i][j], dp[i - 1][j - wi] + 1)  
for i in range(W, -1, -1):  
 if dp[-1][i] != -1:  
 print(i)  
 break

# Рюкзак с ценой предметов

n, W = map(int, input().split())  
weight = [0] + [int(x) for x in input().split()]  
cost = [0] + [int(x) for x in input().split()]  
  
dp = [[-1] \* (W + 1) for i in range(len(weight))]  
dp[0][0] = 0  
  
for i in range(1, len(weight)):  
 wi = weight[i]  
 ci = cost[i]  
 for j in range(W + 1):  
 dp[i][j] = dp[i - 1][j]  
 if j - wi >= 0 and dp[i - 1][j - wi] != -1:  
 dp[i][j] = max(dp[i][j], dp[i - 1][j - wi] + ci)  
print(max(dp[-1]))

# Куча камней [АиСД]

n = int(input())  
weight = [int(x) for x in input().split()]  
  
ans = sum(weight)  
for i in range(2\*\*n):  
 mask = **'00000000000000000000000'** + bin(i)[2:]  
 mask = mask[::-1][:n]  
 s0 = 0  
 s1 = 0  
 for j in range(n):  
 if mask[j] == **'0'**:  
 s0 += weight[j]  
 else:  
 s1 += weight[j]  
 ans = min(ans, abs(s0 - s1))  
print(ans)

НВП

arr = [1, 3, 4, 2, 5, 9, 7, 1, 8, 5]  
dp = [1 for i in range(len(arr))]  
p = [i for i in range(len(arr))]  
for i in range(1, len(arr)):  
 for j in range(i - 1, -1, -1):  
 if arr[i] > arr[j] and dp[i] < dp[j] + 1:  
 dp[i] = dp[j] + 1  
 p[i] = j  
v = dp.index(max(dp))  
while v != p[v]:  
 print(arr[v])  
 v = p[v]  
print(arr[v])