import numpy as np  
  
  
def find\_possible\_ways():  
 total\_coins = len(coins)  
  
 arr = [[0] \* (total + 1) for x in range(total\_coins + 1)]  
  
 for i in range(total\_coins + 1):  
 arr[i][0] = 1  
  
 for i in range(1, total\_coins + 1):  
 for j in range(1, total + 1):  
 value = coins[i - 1]  
  
 if value > j: # coin is too large  
 arr[i][j] = arr[i - 1][j]  
 continue  
  
 unused = arr[i - 1][j]  
  
 if k is None or j <= (k[i-1] \* value):  
 used = arr[i][j - value]  
 else:  
 used = 0  
 for limit in range(1, k[i-1] + 1):  
 used += arr[i - 1][j - (limit \* value)]  
  
 arr[i][j] = unused + used  
  
 print(np.array(arr))  
 print()  
 return arr[total\_coins][total]  
  
  
coins = [1, 2, 3, 4]  
k = [8, 4, 2, 1]  
total = 20  
  
print(f"The possible ways {total} can be made is {find\_possible\_ways()}")

PYTHON