#Problem 1

Name: Simple Coin Change
Description:
You will be given N coins and an amount K. You can use each coin an infinite number of times. You have to print the minimum number of coins needed to make the amount K.

In the first line you will be given N and K. In the following line, you will be given N values denoting N coins.

Test Cases:

Input	Output
8 6 1 2 5 10 20 50 100 200	2
8 170 1 2 5 10 20 50 100 200	3
8 2 1 2 5 10 20 50 100 200	1
8 201 1 2 5 10 20 50 100 200	2
8 217 1 2 5 10 20 50 100 200	4

#Problem 2

Name: Fractional Knapsack
Description:
You will be given N items and a knapsack weight W. Each item N[i] has two elements, its positive benefit per unit b[i] and its total weight w[i]. You have to choose the elements in such a way that you can maximize your total benefit. You can take a fractional amount of weights for each item.

In the first line, you will be given N and W. In the first following line you will be given N values, each element denotes the positive benefit per unit where i^{th} value is for the i^{th} element. In the second following line, you will again be given N values, each denoting the weights where i^{th} value denotes the total weight for i^{th} element.

Test Cases:

Input	Output
5 10 3 4 20 5 50 4 8 2 6 1	124
5 12.5 3 4 20 5 50 4 8 2 6 1	134
5 7 3 4 20 5 50 4 8 2 6 1	110

#Problem 3

Name: Activity Scheduling
Description:
You will be given N tasks, each having a starting and ending time. You can complete only one task at a time. You have to schedule the tasks in such an order so that the number of completed tasks maximizes.

In the first line, you will be given a value N. In the following N lines, you will be given the information of each N task where the i^{th} line contains the starting and ending time for the i^{th} task.
Test Cases:

Input	Output
4 1 10 2 3 4 7 8 12	3
3 1 2 2 3 4 5	2
4 1 2 3 4 5 6 7 8	4

3 1 10 10 11 11 20	2

#Problem 4

Name: Combination
Description:
You will be given N and R. You need to calculate ${}^{N}C_{R}$.

Test Cases:

Input	Output
10 3	120
5 2	10
7 4	35