DWITE Online Computer Programming Contest
January 2007

Problem 4

Number Theory

One of the basic problems in number theory is to find the number of ways that a positive integer , N, can be expressed as the sum of R positive integers.

For example, 5 can be written as the sum of 3 positive integers in two different ways: 3+1+1 and 2+2+1. Note that 1+2+2 and 2+1+2 do not count as "different ways", since the same set of numbers is used.

The input file (**DATA41.txt** for the first submission and **DATA42.txt** for the second submission) will contain five lines of data. Each line of data will contain a positive integer N (N<50) and R (R<=N) separated by a space.

The output file (**OUT41.txt** for the first submission and **OUT42.txt** for the second submission) will contain five lines of data corresponding to each of the input lines. Each line will contain the number of different ways to express N as the sum of R positive integers.

Sample Input (Three lines only)

```
5 3
10 6
19 8
```

Sample Output (Three lines only)

```
2
5
52
```