

STA Online Computer Programming Contest (DWITE)
January 2003

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 (DATA4) will contain five lines of data. Each line of data will contain a positive integer N ($N < 50$) and R ($R \leq N$) separated by a space.

The output file (OUT4) 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

```
2
5
52
```