

## Problem 6—Dungeons and Kine

Although the Kine of Araw are long extinct by the Third Age, the hobbits frequently enjoy playing Dungeons and Kine, an epic multiplayer role-playing game. The game involves rolling multi-colored multi-sided dice and making decisions based on the sum of the numbers appearing on the dice.

Bilbo and Frodo play this game frequently and often wonder how many ways there might be to roll a specific number. You will provide this information.

**INPUT SPECIFICATION.** The input file will consist a number of data cases consisting of three integers: the number of dice (between 2 and 10), the number of sides on the dice (between 2 and 20), and the value you're trying to roll. There will be one space between numbers, and the third number will be followed by <EOLN>. The last data case will be followed by "0<EOLN>".

**OUTPUT SPECIFICATION.** The output cases should appear in the same relative order as the input cases. Each output case should be in the form "Case  $c$ : There are  $n$  ways to roll a  $v$ .<EOLN>" where  $c$  is the case number,  $n$  is the number of ways to roll that number, and  $v$  is the value you're trying to roll. Note that  $n$  might be a *very* large number.

### **SAMPLE INPUT.**

```
2·6·1<EOLN>
2·6·7<EOLN>
10·20·100<EOLN>
0<EOLN>
<EOF>
```

### **SAMPLE OUTPUT.**

```
Case·1:·There·are·0·ways·to·roll·a·1.<EOLN>
Case·2:·There·are·6·ways·to·roll·a·7.<EOLN>
Case·3:·There·are·212960598279·ways·to·roll·a·100.<EOLN>
<EOF>
```