

## P27

A sequence of  $N$  positive integers ( $10 < N < 100\,000$ ), each of them less than or equal 10000, and a positive integer  $S$  ( $S < 100\,000\,000$ ) are given. Write a program to find the minimal length of the subsequence of consecutive elements of the sequence, the sum of which is greater than or equal to  $S$ .

### Input

Many test cases will be given. For each test case the program has to read the numbers  $N$  and  $S$ , separated by an interval, from the first line. The numbers of the sequence are given in the second line of the test case, separated by intervals. The input will finish with the end of file.

### Output

For each the case the program has to print the result on separate line of the output file.

### Sample Input

```
10 15
5 1 3 5 10 7 4 9 2 8
5 11
1 2 3 4 5
```

### Sample Output

```
2
3
```

## P28

The player starts with a prize of \$1, and is asked a sequence of  $n$  questions. For each question, he may

- quit and keep his prize.
- answer the question. If wrong, he quits with nothing. If correct, the prize is doubled, and he continues with the next question.

After the last question, he quits with his prize. The player wants to maximize his expected prize.

Once each question is asked, the player is able to assess the probability  $p$  that he will be able to answer it. For each question, we assume that  $p$  is a random variable uniformly distributed over the range  $t..1$ .



### Input

Input is a number of lines, each with two numbers: an integer  $1 \leq n \leq 30$ , and a real  $0 \leq t \leq 1$ . Input is terminated by a line containing '0 0'. This line should not be processed.

### Output

For each input  $n$  and  $t$ , print the player's expected prize, if he plays the best strategy. Output should be rounded to three fractional digits.

### Sample Input

```
1 0.5
1 0.3
2 0.6
24 0.25
0 0
```

### Sample Output

```
1.500
1.357
2.560
230.138
```