

Coins

In your wallet, you have n coins, at most 50 of them. Each coin has its value c_i , which is an integer from 1 to 1000 bucks.

For lunch, you have to pay the amount of s bucks, which is an integer from 1 to 20,000. In how many ways can you do this?

(Two ways are considered different if they use different subsets of your coins. Coins with the same value are distinguishable.)

Input

The first line contains the numbers n and s . The second line contains the prices of individual coins: c_1 to c_n . The coins will be sorted from the cheapest to the most expensive.

Output

Print one line with one integer: the number of ways to pay the given amount with the given coins.

(Don't forget to use a sufficiently large variable to store the output.)

Examples

input

```
5 8
1 2 2 5 20
```

output

```
2
```

Note that the answer is 2, not 1.

If we label the coins as A, B, C, D, E (in the order from the input), the two solutions in question are $A + B + D$ and $A + C + D$.

input

```
4 160
5 80 80 90
```

output

```
1
```

input

```
10 32
1 2 3 4 5 6 7 8 9 10
```

output

```
36
```