Numbered Balls

locked

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This is a kids game for learning the mathematical addition. The kids have **B** unique balls, and each ball has a unique number/value written upon it. We give the kids a total value **V**, and it is required from them to find the **minimum number** of balls that can be used to get the total value V. Assume that there is an inifite number of balls of each ball value. If there is no possible way to get that total value from the given balls, print "**no solution**". Use **DP solution** to solve this problem. A manual grade penalty will be applied if you did not use a dp solution.

Submissions: 32
Max Score: 10
Difficulty: Medium

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Input Format

- one line contains two integers: the total value V then the number of unique balls B (space separated)
- another line contains B integers space seperated representing the value written upon each unique ball

Constraints

- 1 <= V <= 10,000
- 1 <= B <= 100
- 1 <= the value written on any ball <= 100

Output Format

- one line containing either the **minimum number of balls** to get the total value V or "**no solution**" if there is no possible solution

Sample Input 0

```
25 5
4 5 2 1 9
```

Sample Output 0

```
4
```

Explanation 0

- we need minimum 4 balls (1 ball of value 5 + 2 balls of value 9 + 1 ball of value 2) = total value 25

Sample Input 1

```
9 3
7 6 8
```

Sample Output 1

```
no solution
```

C++20

```
1  #include <cmath>
2  #include <cstdio>
3  #include <vector>
4  #include <iostream>
5  #include <algorithm>
6  using namespace std;
7
8
9  int main() {
10     /* Enter your code here. Read input from STDIN. Print output to STDOUT */
11     return 0;
12 }
13
```

Line: 1 Col: 1

Upload Code as File | Test against custom input | Run Code | Submit Code