



Subset sum problem

Given an array of non-negative integers, and a value *sum*, determine if there is a subset of the given set with sum equal to given *sum*.

Example 1:

Input

6

3 34 4 12 5 2

9

Output:

2

Input:

N = 6

arr[] = {3, 34, 4, 12, 5, 2}

sum = 9

Output: 2

Explanation: Here there exists subset with sum = 9 are

$3+4+2 = 9$, $5+4 = 9$



Example 2:

Input

6

3 34 4 12 5 2

30

Output:

0

Input:

N = 6

arr[] = {3, 34, 4, 12, 5, 2}

sum = 30

Output: 0

Explanation: There is no subset with sum 30.