

1005. Stone Pile

Time limit: 1.0 second

Memory limit: 64 MB

You have a number of stones with known weights w_1, \dots, w_n . Write a program that will rearrange the stones into two piles such that weight difference between the piles is minimal.

Input

Input contains the number of stones n ($1 \leq n \leq 20$) and weights of the stones w_1, \dots, w_n (integers, $1 \leq w_i \leq 100000$) delimited by white spaces.

Output

Your program should output a number representing the minimal possible weight difference between stone piles.

Sample

input	output
5 5 8 13 27 14	3

Problem Source: USU Championship 1997