Day 0: Weighted Mean ☆

1 more challenge to get your first star!

Points: 2/3

10 Days of Statistics

Problem Submissions Leaderboard Editorial Tutorial

Objective

In the previous challenge, we calculated a *mean*. In this challenge, we practice calculating a *weighted mean*. Check out the Tutorial tab for learning materials and an instructional video!

Task

Given an array, X, of N integers and an array, W, representing the respective weights of X's elements, calculate and print the weighted mean of X's elements. Your answer should be rounded to a scale of 1 decimal place (i.e., 12.3 format).

Input Format

The first line contains an integer, N, denoting the number of elements in arrays X and W.
The second line contains N space-separated integers describing the respective elements of array X.
The third line contains N space-separated integers describing the respective elements of array W.

Constraints

- $5 \leq N \leq 50$
- $0 < x_i \leq 100$, where x_i is the i^{th} element of array X.
- $0 < w_i \leq 100$, where w_i is the i^{th} element of array W.

Output Format

Print the *weighted mean* on a new line. Your answer should be rounded to a scale of 1 decimal place (i.e., 12.3 format).

Sample Input

```
5
10 40 30 50 20
1 2 3 4 5
```

Sample Output

```
32.0
```

Explanation

We use the following formula to calculate the weighted mean:

$$m_w = \frac{\sum_{i=0}^{N-1}(x_i \times w_i)}{\sum_{i=0}^{N-1} w_i} \Rightarrow m_w = \frac{10 \times 1 + 40 \times 2 + 30 \times 3 + 50 \times 4 + 20 \times 5}{1 + 2 + 3 + 4 + 5} = \frac{480}{15} = 32.0$$

And then print our result to a scale of 1 decimal place (32.0) on a new line.

Python 3

```
1  size = int(input())
2  numbers = list(map(int, input().split()))
3  weights = list(map(int, input().split()))
4
5  numbers= sum([a*b for a,b in zip(numbers,weights)])
6  weights = sum(weights)
7  print(round(numbers/weights,1))
8
```

Line: 5 Col: 49

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

You have earned 30.00 points!

You are now 1 challenge away from the 1st star for your 10 days of statistics badge.

67% 2/3

10 Days of Statistics

Congratulations

You solved this challenge. Would you like to challenge your friends?

Next Challenge

Test case 0 ✓

Test case 1 ✓

Test case 2 ✓

Test case 3 ✓

Compiler Message

Success

Input (stdin) Download

```
5
10 40 30 50 20
1 2 3 4 5
```

Expected Output Download