Question #2: Weighted Exam Score

Objective: Simple list processing using slicing

In the exam of a course, the exam is divided into three exams (**Exam1, Exam2, and Exam3**). Each exam contains one or more questions. **Each exam question worths 100 points**. Each exam may weight differently. Total exam score can be calculated by the formula:

$$Total\ exam\ score = \frac{sum(Exam1\ scores) * w1 + sum(Exam2\ scores) * w2 + sum(Exam3\ scores) * w3}{Full\ score}$$

Your task is to write a program to calculate **total exam score** from given exam scores, and exam weights.

INPUT

First line is the number of questions in **Exam1, Exam2 and Exam3**.

Second line is the weight for **Exam1, Exam2, Exam3**, which total to 100%.

Third line is the scores for questions in **Exam1** followed by **Exam2** and **Exam3** respectively.

(Note: each line contains integer numbers separated by space)

OUTPUT

Total exam score calculated from provided formula **rounded to 2 decimal places**.

EXAMPLES

Input (from keyboard)	Output (on screen)	Description of Input
1 1 1 20 30 50 70 80 90	27.67	$\frac{70\times 20 + 80\times 30 + 90\times 50}{300} = 27.666666666666668$
1 2 3 30 50 20 80 80 80 80 80 80	25.33	$\frac{80\times 30 + 160\times 50 + 240\times 20}{600} = 25.333333333333332$
3 2 2 33 33 34 70 80 90 100 90 80 70	27.56	$\frac{2400\times 33 + 190\times 33 + 150\times 34}{700} = 27.557142857142857$
3 2 2 50 25 25 70 80 90 100 90 80 70	29.29	$\frac{240\times 50 + 190\times 25 + 150\times 25}{700} = 29.285714285714285$
3 2 5 50 25 25 40 80 0 100 60 80 0 60 40 60 Some questions got 0	16.0	$\frac{120\times 50 + 160\times 25 + 240\times 25}{1000} = 16.0$
3 2 3 50 25 25 70 80 0 100 90 80 70	Invalid data	# of exam scores != total questions
3 2 2 33 33 33 70 80 90 100 90 80 70	Invalid data	Sum of weights != 100

TESTCASES in Grader

Testcases will be grouped. Each group has the following criteria:

Testcases quantity	Test case characteristics
15%	All exams have same # of questions
15%	All exam scores are the same
15%	Some exam scores are zero (0).
15%	Extreme weight distribution, i.e. 90, 5, 5
15%	Invalid
25%	Other valid data