

Class 2 - Find the Torsional Angle

You are given four points A, B, C and D in a 3-dimensional Cartesian coordinate system. You are required to print the angle between the plane made by the points A, B, C and B, C, D in degrees(**not radians**). Let the angle be PHI .

$$\cos(PHI) = (X \cdot Y) / (|X| |Y|) \text{ where } X = AB \times BC \text{ and } Y = BC \times CD.$$

Here, $X \cdot Y$ means the dot product of X and Y , and $AB \times BC$ means the cross product of vectors AB and BC . Also, $AB = B - A$.

Input Format

One line of input containing the space separated floating number values of the X, Y and Z coordinates of a point.

Output Format

Output the angle correct up to two decimal places.

Sample Input

```
0 4 5
1 7 6
0 5 9
1 7 2
```

Sample Output

```
8.19
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