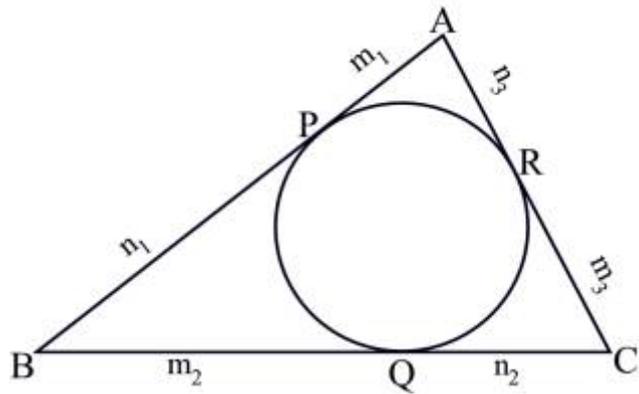


## 11524 In-Circle

In-circle of a triangle is the circle that touches all the three sides of the triangle internally. The center of the in-circle of a triangle happens to be the common intersection point of the three bisectors of the internal angles. In this problem you will not be asked to find the in-circle of a triangle, but will be asked to do the opposite!!



You can see in the figure above that the in-circle of triangle ABC touches the sides AB, BC and CA at point P, Q and R respectively and P, Q and R divides AB, BC and CA in ratio  $m_1:n_1$ ,  $m_2:n_2$  and  $m_3:n_3$  respectively. Given these ratios and the value of the radius of in-circle, you have to find the area of triangle ABC.

### Input

First line of the input file contains an integer  $N$  ( $0 < N < 50001$ ), which denotes how many input sets are to follow. The description of each set is given below.

Each set consists of four lines. The first line contains a floating-point number  $r$  ( $1 < r < 5000$ ), which denotes the radius of the in-circle. Each of the next three lines contains two floating-point numbers, which denote the values of  $m_1, n_1, m_2, n_2, m_3$  and  $n_3$  ( $1 < m_1, n_1, m_2, n_2, m_3, n_3 < 50000$ ) respectively.

### Output

For each set of input produce one line of output. This line contains a floating-point number that denotes the area of the triangle ABC. This floating-point number should contain four digits after the decimal point. Errors less than  $5 * 10^{-3}$  will be ignored. Use double-precision floating-point number for calculation.

### Sample Input

```

2
140.9500536497
15.3010457320 550.3704847907
464.9681681852 65.9737378230
55.0132446384 10.7791711946
208.2835101182
    
```

145.7725891419 8.8264176452  
7.6610997600 436.1911036207  
483.6031801012 140.2797089713

### Sample Output

400156.4075  
908824.1322