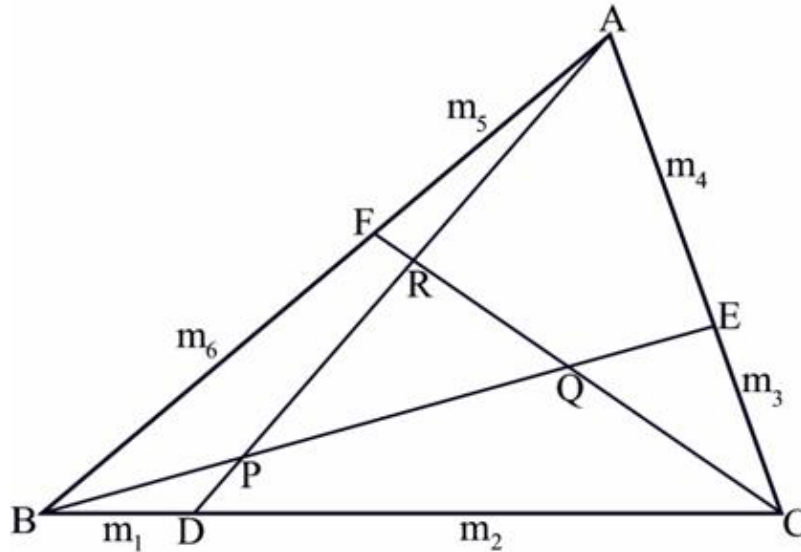




4413 - Triangle Hazard

Asia - Kuala Lumpur - 2008/2009

In the picture below you can see a triangle **ABC**. Point **D**, **E** and **F** divides the sides **BC**, **CA** and **AB** into $m_1:m_2$, $m_3:m_4$ and $m_5:m_6$ ratios respectively. **A**, **D**; **B**, **E** and **C**, **F** are connected. **AD** and **BE** intersect at **P**, **BE** and **CF** intersect at **Q** and **CF** and **AD** intersect at **R**.



So now a new triangle **PQR** is formed. Given triangle **ABC** it is very easy to find triangle **PQR**, but given triangle **PQR** it is not straight forward to find **ABC**. Your task is now to do that.

Input

First line of the input file contains an integer **N** ($0 < N < 25001$) which denotes how many sets of inputs are there. Input for each set contains six floating-point number $P_x, P_y, Q_x, Q_y, R_x, R_y$. ($0 \leq P_x, P_y, Q_x, Q_y, R_x, R_y \leq 10000$) in one line and six positive integers $m_1, m_2, m_3, m_4, m_5, m_6$ ($m_1 < m_2, m_3 < m_4$ and $m_5 < m_6$) in another line. These six numbers denote that the coordinate of points **P**, **Q** and **R** are (P_x, P_y) , (Q_x, Q_y) and (R_x, R_y) respectively. **P**, **Q** and **R** will never be collinear and will be distinct and there will always be a triangle **ABC** for the given input triangle **PQR**. Also note that **P**, **Q** and **R** will be given in counter clockwise order in the input.

Output

For each line of input produce one line of output. This line contains six floating-point numbers. These six integers denote the coordinates of **A**, **B** and **C**. That is the first two integers denote the coordinate of **A**, the third and fourth integers denote the coordinate of **B** and fifth and sixth integers denotes the coordinate of **C**. **A**, **B** and **C** will appear counter clockwise order. All the output numbers should have eight digits after the decimal point.

Sample Input

3

4467.61586728 8492.59551366 7060.96479020 6775.46633005 6725.89311907 9028.87449315

11 56 38 97 49 60

5779.32806104 1918.19337634 7490.69623286 4845.34535926 6419.53729066 4864.56878239

18 80 56 87 58 59

8991.93033007 6724.32910758 7219.48100000 7527.95330769 8549.92222645 3068.19948096

13 86 11 44 20 35

Output for Sample Input

9231.81800000 9623.96300000 3537.20000000 9108.65000000 7337.89000000 4913.10199999

7424.76700001 9490.84399999 4757.24799999 170.01100001 9262.77299999 4813.54299999

8242.99300000 529.39300000 9373.35300000 6551.39300000 6655.90700000 9417.10200000

Problem setter: Shahriar Manzoor, Special Thanks: Rujia Liu

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