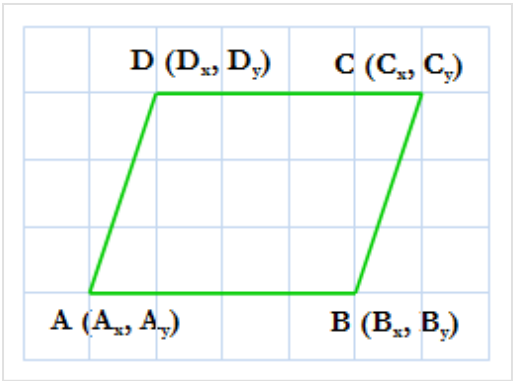


# Area of a Parallelogram

A parallelogram is a quadrilateral with two pairs of parallel sides. See the picture below:



Now you are given the co ordinates of **A**, **B** and **C**, you have to find the coordinates of **D** and the area of the parallelogram. The orientation of **ABCD** should be same as in the picture.

## Input

Input starts with an integer **T** ( $\leq 1000$ ), denoting the number of test cases.

Each case starts with a line containing six integers  $A_x, A_y, B_x, B_y, C_x, C_y$  where  $(A_x, A_y)$  denotes the coordinate of **A**,  $(B_x, B_y)$  denotes the coordinate of **B** and  $(C_x, C_y)$  denotes the coordinate of **C**. Value of any coordinate lies in the range  $[-1000, 1000]$ . And you can assume that **A**, **B** and **C** will not be collinear.

## Output

For each case, print the case number and three integers where the first two should be the coordinate of **D** and the third one should be the area of the parallelogram.

Sample Input	Sample Output
3 0 0 10 0 10 10 0 0 10 0 10 -20 -12 -10 21 21 1 40	Case 1: 0 10 100 Case 2: 0 -20 200 Case 3: -32 9 1247