Help Johnny

Poor Johnny is so busy this term. His tutor threw lots of hard problems to him and demanded him to accomplish those problems in a month. What a wicked tutor! After cursing his tutor thousands of times, Johnny realized that he must start his work immediately.

The very problem Johnny should solve firstly is about a strange machine called Warmouth. In the Warmouth there are many pairs of balls. Each pair consists of a red ball and a blue ball and each ball is assigned a value. We can represent a pair in the form of (R, B) in which R is the value of the red ball and B is of the blue one. The match value of (R1, B1) and (R2, B2) is R1\*B2+R2\*B1. Warmouth has a generator to calculate the match value of two pairs. Initially, Warmouth is empty. Pairs are sent into Warmouth in order. Once a new pair comes, it will be taken into the generator with all the pairs already in Warmouth.

Johnny’s work is to tell his tutor the sum of all match values given the list of pairs in order. As the best friend of Johnny, would you like to help him?

**Input**

The first line of the input is T (no more than 10), which stands for the number of lists Johnny received.

Each list begins with “N“(without quotes). N is the number of pairs of this list and is no more than 100000.

The next line gives N pairs in chronological order. The 2i-th number is the value of the red ball of the i-th pair and the (2i+1)-th number is the value of the blue ball of the i-th pair. The numbers are positive integers and smaller than 100000.

**Output：**

Please output the result in a single line for each list in the format of "Case x: d", in which x is the case number counted from one and d is the sum. The result is guaranteed to be smaller than 2^63.

**Sample Input**

2

3

1 3 2 2 3 1

2

4 5 6 7

**Sample Output**

Case 1: 26

Case 2: 58