C. Merge Sort

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| Program: merge.(py|cpp|java)  Input: merge.in |

**Description**

Now, Khalid is asking you to implement Merge sort to sort a list of integers.

Input

The input file starts with a single integer N<100 denoting the number of test cases followed by test cases each on a separate line.

A test case starts with a positive integer X<107 representing the number of integers in this case followed by *X* integers where each integer 0=< *ai* < 1010

Output

For each test case, on a single line print all integers in ascending order.

Time and Space Analysis

Discuss your implementation time and space requirements. Also, Why this sorting algorithm faster than psort?

**Sample Input /output**

2

3 10 65 33

2 10000 3234

10 33 65

3234 10000

OUTPUT

psort.in