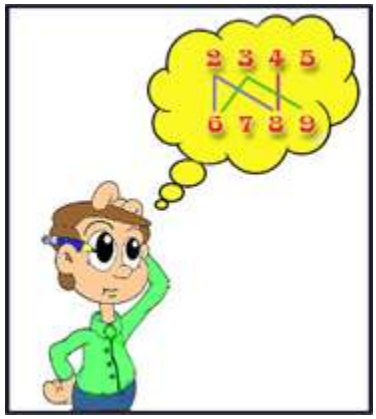
1149 – Factors and Multiples

You will be given two sets of integers. Let's call them set **A** and set **B**. Set **A** contains **n** elements and set **B** contains **m** elements. You have to remove $\mathbf{k_1}$ elements from set **A** and $\mathbf{k_2}$ elements from set **B** so that of the remaining values no integer in set **B** is a multiple of any integer in set **A**. $\mathbf{k_1}$ should be in the range **[0, n]** and $\mathbf{k_2}$ in the range **[0, m]**.

You have to find the value of $\mathbf{(k_1 + k_2)}$ such that $\mathbf{(k_1 + k_2)}$ is as low as possible. **P** is a multiple of **Q** if there is some integer **K** such that **P = K * Q**.



Suppose set **A** is **{2, 3, 4, 5}** and set **B** is **{6, 7, 8, 9}**. By removing **2** and **3** from **A** and **8** from B, we get the sets **{4, 5}** and **{6, 7, 9}**. Here none of the integers **6, 7** or **9** is a multiple of **4** or **5**.

So for this case the answer is **3** (**two** from set **A** and **one** from set **B**).

Input

Input starts with an integer **T (≤ 50)**, denoting the number of test cases.

The first line of each case starts with an integer **n** followed by **n** positive integers. The second line starts with **m** followed by **m** positive integers. Both **n** and **m** will be in the range **[1, 100]**. Each element of the two sets will fit in a **32** bit signed integer.

Output

For each case of input, print the case number and the result.

Sample Input	Output for Sample Input
2 4 2 3 4 5 4 6 7 8 9 3 100 200 300 1 150	Case 1: 3 Case 2: 0