

Problem

Chef has prepared a menu for his new restaurant. The menu consists of N dishes whose flavour is given by M_1, M_2, \dots, M_N , where M_i denotes the flavour of the i^{th} dish.

Chef has some rules in his restaurant-

- A dish is served only if the customer has already eaten all the dishes preceding it on the menu.
- Each dish will only be served once.

Aman, the richest man in the area, stops by the restaurant one day and inquires about the deliciousness of a dinner that he may have there. Aman has a favourite ingredient p which is a **prime number** and he wants to eat dishes with the most flavour that contains this ingredient. A dish with flavour M_i contains the ingredient p only if p is a divisor of M_i .

In order for Aman to patronise Chef's restaurant on a regular basis, he agrees to reorder his menu to fulfil Aman's wishes. He decides that he will reorder the dishes that contain Aman's favourite ingredient while leaving the position of other dishes unchanged. For example, if $M = [1, 2, 3, 4, 5, 6]$ and $p = 2$ then Chef can reorder his menu into $[1, 4, 3, 2, 5, 6]$ or into $[1, 4, 3, 6, 5, 2]$ but not into $[2, 1, 3, 4, 5, 6]$ since the first dish with flavour 1 does not contain p as p is not a divisor of 1.

Aman wants to know the deliciousness of his meal, which is the total sum of flavours of all dishes if he eats k dishes (first k dishes of the menu) and his favourite ingredient is p . Can you help Chef find the maximum deliciousness after reordering his menu?

You have to answer Q queries and each query will contain the favourite ingredient p and the number of dishes Aman wants to eat k . Each query is independent, i.e. changes made to the menu in one query do not affect the next one.

Input Format

- The first line of input will contain a single integer T , denoting

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