

Problem H

Flying Buskers

Time limit: 1 second

A group of professional buskers are performing some juggling for ACM ICPC 2018 today. They have prepared Y types of items for their juggling performance. Total items that they want to juggle are N items.

As juggling seems to be very boring, they have prepared a special trick. They put a sequential number $(1, 2, 3, \dots, N)$ in every items they want to juggle, then they will start juggling and discard the item at prime number count while they juggle. As a human, they can only juggle up to L items at once. Thus, the leader of the group will reset the counting and keep juggling, or stop the juggling every time the item number 1 is in his hand. They discard the prime position items until there are L or less items.

For their final trick, the leader of the group will sum up all item that he is juggling into a giant sack. Please find the number of possibilities of the giant sack's item.

Input

The first line of the input means the number of test case (T),

then for the next T line,

input 3 numbers, as number of items (N), the juggling limit (L), and item types (Y).

Output

For each line of testcase, print the possibilities of the giant sack's item. Since the answers can be a very large number, please mod them by 10^9+7 .

Constraints:

$$1 \leq T \leq 1000000$$

$$1 \leq N \leq 1000000$$

$$1 \leq L \leq N \leq 10000$$

$$1 \leq Y \leq L \leq 1000$$

Sample Input:	Sample Output:
3	1
5 3 1	4
16 5 2	20
18 5 4	

Explanation

For test case 1,

2, 3, and 5 is a prime number, so the group leader will distribute 3 item to his fellow buskers. Since there is only 2 item he is juggling, so he will put the remaining item to his giant sack. There is only 1 type of item that they juggle, so every time they juggle, there will always be 2 item type 1 in the sack.

For test case 2,

2, 3, 5, 7, 11, and 13 is a prime number, so the group leader will distribute 6 item to his fellow buskers. There is 10 item he is juggling, where his limit is 5, so he will discard prime count. Since [1, 4, 6, 8, 9, 10, 12, 14, 15, 16] prime count is number [4, 6, 9, 12], so he discard them. There is 6 item he is juggling now [1, 8, 10, 14, 15, 16], and it's still over his limit, so he will discard prime count again [8, 10, 15]. The items that he put in the sacks are 3 item [1, 14, 16] and there is 2 item type possibilities. The possibilities are:

- 3 items type 1;
- 3 items type 2;
- 2 items type 1 and 1 item type 2;
- 1 item type 1 and 2 item type 2;

It's means that there are 4 combinations for items in the sack.

For testcase 3,

The final prime count will be [1, 14, 16], and there is 4 item type possibilities, we believe you can count the possibilities yourself, and there are 20 combinations for items in the sack.