Problem DUFFMAN: Help Duffman

Most people in Springfield know Duffman — either from the annual "How low can you go" contest where he is a member of the jury or from several Duff-sponsored events (such as the "Beer-tender" competition). As the mascot and spokesperson for the Duff Beer company, he wears red and blue tights, a red cape, dark sunglasses and a utility belt of beer cans around his waist.

Duffman is also a member of Duff's sales department where he is responsible for the process of packing beer cans into boxes. This is actually done by an old machine that does not work very well. It gets stuck quite often, so that the boxes that could hold up to m ($m \geq 1$) cans each just occasionally get filled completely. Interestingly, if there are n ($m \leq n \leq 1000000$) cans to pack, the machine never produces an empty box. Moreover, even stranger, the machine always fills up at least one box completely. This odd behaviour has stimulated Duffman's curiosity — he now wants to know the number of ways that n cans can be packed into boxes of size m by the machine (under the assumption that the machine always works as described). Note that the boxes have unique bar codes and so are distinguishable.

For example, if a box can contain up to three cans and there are five cans to send out, this could be done in exactly five ways:

$$(1, 1, 3), (1, 3, 1), (3, 1, 1), (2, 3), (3, 2).$$

Note that $(1, 1, 3)$ and $(1, 3, 1)$ are counted as different because of the bar codes. $(1, 1, 1, 2)$ would not be a valid way since there must be a box with three cans. As the number of ways might be quite large, Duffman is only interested in the last d digits of this number ($1 \leq d \leq 9$).

Since Duffman has no practice in solving problems, he needs your help.

Input

The input starts with a line containing C, the number of test cases ($1 \leq C \leq 20$). Then follow exactly C lines; each line contains the three numbers n, m and d.

Output

Output one number on a separate line for each testcase. Do not print any leading zeros.

Sample Input 1	Sample Output 1
6	5
5 3 9	4
4 2 6	8811889
77 7 7	24352
123 50 5	1
124 1 5	1
51 51 9	