Magic Boxes

Problem Statement

In the power of Bertgod, the capacity of a box is redefined. For the same kind of box, there is a magic power **M**. A box with **M** power means that it can hold any number of items which is "**M** of power x". For example, if M = 2, so the box can hold $1(2^0)$, $2(2^1)$, $4(2^2)$, $8(2^3)$, and so on.

Now, Bertgod wants to challenge you with a question. Given an unlimited supply of box **M**, and a number of items, **N**, he wants you to store in the box, he wants to know how many different ways there are to hold those items.

For example, if Bertgod gives M = 2, N = 7. The answer is 6:

$$7 = 7 * 1$$
$$7 = 5 * 1 + 1 * 2$$
$$7 = 3 * 1 + 2 * 2$$
$$7 = 3 * 1 + 1 * 4$$
$$7 = 1 * 1 + 3 * 2$$
$$7 = 1 * 1 + 1 * 2 + 1 * 4$$

Input

There are multiple test cases. For each test case, there are two integers, N and M, separated by a space. (1 < m <= n < 1000000)

The input ends with EOF

Output

For each case, output the number of different way to store the items. As the answer will be very large, you need to mod the answer by 1000000007

Sample

Input	Output
7 2 1000000 500 100000 50000	6 5005 3