Problem I. Ma Meilleure Ennemie

Time limit: 1.5 seconds
Memory limit: 1024 megabytes

"Can we just pretend like it's the first time?"

Ekko has just invented the Z-Drive, which allows him to travel back in time. Heimerdinger developed this device to send Ekko back to the correct Universe.

However, due to the spatio-temporal distortion caused by the anomalies, there are n Ekkos that have been transported to this Universe. It is hard to find where to send them back, so Heimerdinger invented a method to determine which Universe these Ekkos belong to. There are m Universes, and the method works as follows:

- The Ekkos are numbered from 0 to $n-1$ and are divided into several groups. Initially, all the Ekkos are in the same group.
- Heimerdinger chooses a group and tries to determine which Universe he should send the Ekkos to.
- Heimerdinger chooses a **good** integer x from $[1, m]$, where an integer x is considered good if and only if, for each Ekko i in this group, the Ekko numbered $(i + x) \bmod n$ is also in this group. For example, if the chosen group contains Ekko $0, 2$, and $n = 4$, then $x = 3$ is not good, while $x = 2$ and $x = 4$ are good.
- Then Heimerdinger divides Ekkos in this group into several *temporary groups*. The division ensures that for each Ekko i in any of the *temporary groups*, the Ekko numbered $(i + x) \bmod n$ is in the same *temporary group* as Ekko i. Heimerdinger will choose the division that maximizes the number of *temporary groups* among all possible divisions when the good integer is x. For example, when $n = 4$ and the group contains $\{0, 1, 2, 3\}$, choosing $x = 2$ will divide this group into two *temporary groups* $\{0, 2\}$ and $\{1, 3\}$.
- If there is only a single *temporary group*, then all the Ekkos in this group are sent back to Universe x. Otherwise, each *temporary group* becomes a new group, and the process repeats with the new groups formed.

Even though this method of discrimination has some minor issues, such as sending multiple Ekkos back to the same universe, there is no time to address it. Given n, m, you need to calculate the number of different results produced by this method of discrimination, modulo 998 244 353. Two results are considered different if and only if some Ekko is sent back into different Universes in the two results.

Input

The first line contains two integers n, m ($1 \le n, m \le 10^{18}$), denoting the number of Ekkos and the number of universes.

Output

Output one integer in one line, denoting the answer, modulo 998 244 353.

Examples

standard input	standard output
4 4	6
2338 1470	18530141