

The Hermit

Input file: **standard input**
Output file: **standard output**
Time limit: 2 seconds
Memory limit: 1024 megabytes

*“Mine eyes doth see the Dao from the
confines of my abode.” Greetings, brave one!*

— Xu Dog

The renowned alchemist Xu Dog discovered that precisely removing impurities could enhance the spiritual essence of the elixirs he was refining. Through day after day of alchemy, he found that the nature of these impurities was intricately related to mathematical problems. Since your progress in Dao is still shallow, Xu Dog decided to tell you the mathematical problem he needs to solve in the most straightforward way, rather than through the esoteric problems of alchemy.

Given two positive integers $n \leq m$, calculate the sum of the answers to the following problem for all subsets of size n of $\{1, 2, \dots, m\}$, modulo 998 244 353:

- In a set of n numbers, you can remove some numbers so that the minimum value of the set is not equal to the greatest common divisor of the set. Find the maximum number of elements that can remain in the set after removal. If no non-empty subset satisfies the condition, the answer is defined as 0.

The greatest common divisor of a set is defined as the largest value among the common divisors of all elements in the set. For example, the greatest common divisor of the set $\{6, 9, 15\}$ is 3.

Input

Input consists of a single line containing two integers m, n ($1 \leq n \leq m \leq 10^5$).

Output

Output an integer representing the answer, modulo 998 244 353.

Examples

standard input	standard output
4 3	7
11 4	1187
100000 99999	17356471

Note

For the first example, all cases are listed below:

- $\{1, 2, 3\}$: $\{2, 3\}$
- $\{1, 2, 4\}$: No solution
- $\{1, 3, 4\}$: $\{3, 4\}$
- $\{2, 3, 4\}$: $\{2, 3, 4\}$

Therefore, the answer is $2 + 0 + 2 + 3 \pmod{998\,244\,353} = 7$.