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Prime

Find the N-th smallest positive integer whose least prime factor is P, or state that the result is greater than 10^9 .

Input

The first and only line of input contains space seperated integers N and P (1 \leq N, P \leq 10 9). P will always be prime.

Output

Output a single line with the expected result, or zero if result exceeds 109.

Sample input	Sample output
1 2	2
2 3	9
1000 1000003	0