Functions

While he was in his Maths class, Ivan came into the world of functions.

He chose to define the function P(X) to be the product of the digits of a natural number X.
For example, P(1543) = 1 * 5 * 4 * 3 = 60.

He also defined Q(X) = X * P(X), where X is a natural number again.
For example Q(1543) = 1543 * 60 = 92580.

Write a program **function,** which by given two natural numbers, L and K, finds the smallest natural number R, such that there are at least K natural numbers X for which the statement L <= Q(X) <= R is true.

Input (**function.in**):
Two natural numbers **L** and **K** ($1 <= L, K <= 10^{18}$).

Output (**function.out**):
The required number **R**. It is guaranteed that $1 <= R <= 10^{18}$.

Limits:
Time limit: 6 sec.
Memory limit: 256 MB.

Sample test :

function.in	function.out
42 42	648