

11752 The Super Powers

We all know the Super Powers of this world and how they manage to get advantages in political warfare or even in other sectors. But this is not a political platform and so we will talk about a different kind of super powers — “The Super Power Numbers”. A positive number is said to be super power when it is the power of at least two different positive integers. For example 64 is a super power as $64 = 8^2$ and $64 = 4^3$. You have to write a program that lists all super powers within 1 and $2^{64} - 1$ (inclusive).

Input

This program has no input.

Output

Print all the Super Power Numbers within 1 and $2^{64} - 1$. Each line contains a single super power number and the numbers are printed in ascending order.

Note: Remember that there are no input for this problem. The sample output is only a partial solution.

Sample Input

Sample Output

1
16
64
81
256
512
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