Project Euler #27: Quadratic primes

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This problem is a programming version of Problem 27 from projecteuler.net

Euler published the remarkable quadratic formula:

$$n^2 + n + 41$$

It turns out that the formula will produce 40 primes for the consecutive values $n = 0$ to 39. However, when $n = 40$, $40^2 + 40 + 41 = 40(40 + 1) + 41$ is divisible by 41, and certainly when $n = 41$, $41^2 + 41 + 41$ is clearly divisible by 41.

Using computers, the incredible formula $n^2 - 79n + 1601$ was discovered, which produces 80 primes for the consecutive values $n = 0$ to 79. The product of the coefficients, -79 and 1601, is -126479.

Considering quadratics of the form:

$$n^2 + an + b, \text{ where } |a| \le N \text{ and } |b| \le N$$

where $|n|$ is the modulus/absolute value of n
e.g. $|11| = 11$ and $|-4| = 4$

Find the coefficients, a and b, for the quadratic expression that produces the maximum number of primes for consecutive values of n, starting with $n = 0$.

Note For this challenge you can assume solution to be unique.

Input Format

The first line contains an integer N.

Output Format

Print the value of a and b separated by space.

Constraints
$42 \le N \le 2000$

Sample Input

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42
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Sample Output

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-1 41
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Explanation

for $a = -1$ and $b = 41$, you get 42 primes.