# Project Euler #27: Quadratic primes

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**

```
42
```

**Sample Output**

```
-1 41
```

**Explanation**

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