

# Project Euler #44: Pentagon numbers

This problem is a programming version of [Problem 44](#) from [projecteuler.net](#)

Pentagonal numbers are generated by the formula,  $P_n = n(3n - 1)/2$ . The first ten pentagonal numbers are:

$$1, 5, 12, 22, 35, 51, 70, 92, 117, 145, \dots$$

It can be seen that  $P_4 + P_7 = 22 + 70 = 92 = P_8$ . Also  $P_7 - P_5 = 70 - 35 = 35 = P_5$  is also pentagonal.

Generalizing for a given  $K$  find all  $P_n, (n < N)$  such that  $P_n - P_{n-K}$  is pentagonal or  $P_n + P_{n-K}$  is pentagonal.

## Input Format

Input contains two integers  $N$  and  $K$  separated by space.

## Output Format

Print the pentagonal numbers corresponding to the test case, each in a new line.

## Constraints

$$1 \leq K \leq 9999$$

$$K + 1 \leq N \leq 10^6$$

## Sample Input

```
10 2
```

## Sample Output

```
70
```