# HackerRank

# **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:

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

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.

# Constraints

 $1 \leq K \leq 99999$  $K+1 \leq N \leq 10^6$ 

## **Output Format**

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

### Sample Input

10 2

### Sample Output

70