Homework #3

There are three problems in this homework, please read each problem definition carefully and try to solve them by yourself.

Problem 1: Numeric Conversion (36%)

In this problem, you will get an unsigned decimal integer, please show the binary, octonary and hexadecimal notation of it.

Input Format

Only one line contains an unsigned decimal integer **n** (0 <= **n** <= 2^{32} - 1).

Output Format

You should output three lines, the first line is the binary notation of **n**, the second line is the octonary notation of **n**, and the third line is the hexadecimal notation of **n**.

Note

You should convert the number by yourself, **DO NOT** use the procedures such as WriteBin, WriteBinB, WriteHex, WriteHexB, etc., or you will not receive any points.

Sample I/O

```
123          // Input, the unsigned decimal integer n.
1111011      // Your output, the binary notation of n.
173          // Your output, the octonary notation of n.
7B           // Your output, the hexadecimal notation of n.
```

Problem 2: Combination (28%)

In this problem, you will get two unsigned integers n and k, please list all the possible combination(s) for choosing k number(s) from 1 to n in increase order.

Input Format

The first line contains an unsigned integer **n**(1 <= **n** <= 100), and the second line contains an unsigned integer **k**(0 <= **k** <= **n**).

Output Format

You should output C(**n**, **k**) line(s), each line is a possible combination for choosing **k** number(s) from 1 to **n**, please list them in increase order and separate each number with a space.

Sample I/O

```
5       // Input, the unsigned integer n.
3       // Input, the unsigned integer k.
1 2 3   // Your output
1 2 4   //
1 2 5   // C(n, k) = C(5, 3) = 10 lines
1 3 4   //
1 3 5   // Each line is a possible combination
1 4 5   // for choosing 3 numbers from 1 to 5.
2 3 4   //
2 3 5   // The numbers in the same line list in increase order.
2 4 5   //
3 4 5   // The combinations list in increase order.
```

Problem 3: Right Triangle (28%)

In this problem, you will get three unsigned integers, please determine whether these three numbers form a right triangle(a triangle with a 90-degree corner) or not.

Input Format

Three lines contain three numbers, each for one line, ranged from 1 to $2^{31} - 1$.

Output Format

You should only output one line, if the three input numbers form a right triangle, please print “Yes”, otherwise print “No”.

Note

Please notice that the square of each number may greater than $2^{32} - 1$, but you can assume there are no sum of squares of any two numbers will greater than $2^{64} - 1$.

Sample I/O

```
3       // Input, the first number
5       // Input, the second number
4       // Input, the third number
Yes     // Your output, the input three numbers form a right
        // triangle while 3^2 + 4^2 = 5^2.
```

Requirements

1. Your program should show the complete answer within 3 seconds.
2. (4%) You need to add some comments in your source code.
3. (4%) Write a report to share how you have done your homework and problems you have experienced(if any).
4. For each problem you need to create a new .asm file, that is, you will have 3 source files in this homework.
5. Upload your source files and report(in .doc or .pdf format) to the E3 platform.
6. The deadline is 2011/5/6(Fri.) 23:59:59, you can have late work before 2011/5/10(Tues.) 23:59:59 with 15% discount per day, after that you will get **ZERO**.
7. Please **DO NOT** take a copy from others, and also **DO NOT** let others copy from you, or you will only get **ZERO**.
8. Your scores are totally depending on the test cases, **DO NOT** ask TAs to give you some more points unless you have a wrong grading.