Assignment 1 – Problem Solving

1. Draw a flowchart to Print all numbers less than N which are part of Fibonacci Series

2. Draw a flowchart to take two numbers and print their GCD.

3. Write a pseudo-code which reads N from user and prints all prime numbers from 2 to N.

4. Write pseudo code which tells whether the input integer number is an Armstrong number, or not. (153 is an Armstrong number because:153 = 13 + 53 + 33)

5. Write pseudo-codes which reads number of lines N and prints the following patterns. [Two different pseudo-code for both patterns]

a)For N = 5	b) For N = 5	c)	c) For N = 7	d) For N = 9
12345	1	5	*	*********
1234	11	44	***	**** ****
123	101	333	*****	*** ***
12	1001	2222	*******	** **
1	10001	11111	*****	* *
			***	** **
			*	*** ***
				**** ****
				*********

6. The captain of the ship TITANIC is a little .... off the track. He needs to select the crew for the ship. But everyone seems to be eligible. So to test their intelligence, he plays a game. The contestants have to stand in a line. They are given the

numbers in the order in which they stand, starting from 1. The captain then removes all the contestants that are standing at an odd position.

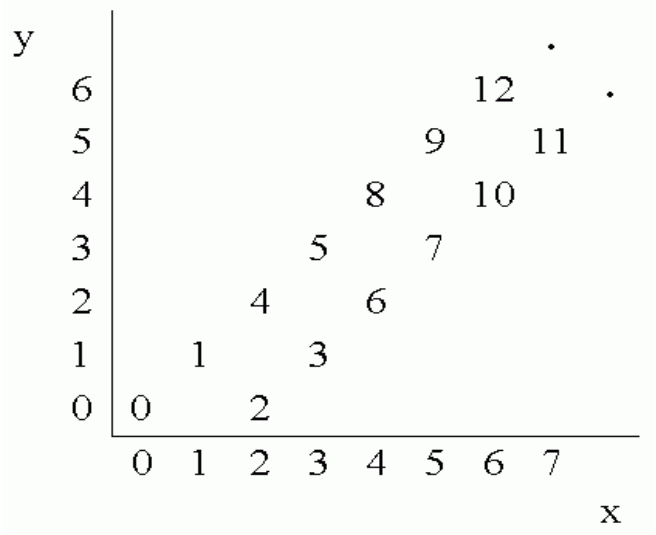
Initially, standing people have numbers - 1,2,3,4,5... After first pass, people left are - 2,4,...

After second pass - 4,...

And so on.

You want to board the ship as a crew member. Given the total number of applicants for a position, find the best place to stand in the line so that you are selected.

7. Starting from point (0,0) on a plane, we have written all non-negative integers 0, 1, 2,... as shown in the figure. For example, 1, 2, and 3 has been written at points (1,1), (2,0), and (3, 1) respectively and this pattern has continued.



You are to write a pseudo-code that reads the coordinates of a point (x, y), and writes the number (if any) that has been written at that point. (x, y) coordinates in the input are in the range 0...100000