Name, Surname   :
Number   :
Course Code   : SEN113-SEN119-SENG102
Course Name   : Computer Programming I

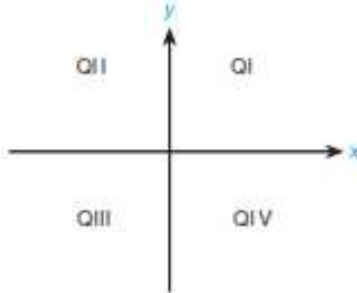Exam   : ○Midterm   ○ Make-up   ● Final
Date   :04.01.2016

Please make sure to write your name and student number on each paper that you have used

Question Number	1(25p)	2(30p)	3(30p)	4(30p)		Total
Mark						

Note:
1-Exam duration is **70 minutes** only. **2-** You **cant take any other paper**. Please use your paper efficiently!
3-<u>You are not permitted to carry your mobile phone into the exam venue even if it is switched off.!!!!</u>

1(25)-Write a _**function**_ that takes the x–y coordinates of a point in the Cartesian plane as parameters and **<u>prints a message</u>** telling either an axis on which the point lies **<u>or</u>** the quadrant in which it is found.

Samples
- If coordinates are (-1.0, -2.5),output message should be " _**quadrant III**_"
- If coordinates are (0.0, 4.8), output message should be " _**on the y-axis**_"

2(30p)-Write a function that determines standart deviation of float array. The function takes dataset as a float array parameter!! And it also return result as a float.
(Clue: calculate average first)
<u>Definations:</u>

$$\sigma = \sqrt{\frac{1}{N}\sum_{i=1}^{N}(x_i - \bar{x})}$$

σ = standard deviation
xi = each value of dataset
x̄ (with a bar over it) = the arithmetic mean of the data (This symbol will be indicated as **average of dataset**)
N = the total number of data points
(if you **need square root** of some number you can use sqrt function in math.h library. Usage example: **a=sqrt(b);** which means "a" is equal to square root of "b")

3(30p)- Write a function that counts the number of _**odd digits**_ _**and**_ _**even digits**_ <u>in an integer</u>. The function take the integer number and does not return any value. The function determines the number of odd digits and even digits and display results to user.
Example: if the number is 142386
Result will be
Odd digit count: 2
Even digit count: 4

4(30p)- What does the following program output and Explain the output comming from where? (Only Output even it is correct) <u>or</u> (only explanation even it is correct) <u>or</u> (wrong Explanation with correct answer) **is zero point**!

```c
#include <stdio.h>
//Prototypes
void sp1(int a, int b);
void sp2(int a[ ], int b[ ]);
void sp3(int *a, int *b);
int main(){
int a[2] = {1, 2};
int b[2] = {8, 9};
sp1(a[0], a[1]);
sp2(a, b);
sp3(&b[0], &b[1]);
printf("%d, %d, %d, %d \n", a[0], a[1], b[0], b[1]);
return 0;}
//functions
void sp1(int a, int b){
int temp = a;
a = b;
b = temp;}
void sp2(int a[ ], int b[ ]){
int temp = a[0];
a[0] = b[0];
b[0] = temp;}
void sp3(int *a, int *b){
int temp = *a;
*a = *b;
*b = temp;}
```

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