

Solve the Following Questions:

Q1. Design a java code that reads the Cartesian coordinates of two points $p_1=(x_1, y_1)$ and $p_2=(x_2, y_2)$ and displays the distance between them using the following formula:

$$\text{distance} = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

Q2. Design and implement a program that prompts its user for a nonnegative integer value n, assume that n has 4 digits or less. The program then computes and displays the sum of digits in n.

Example execution:

```
Input a number with at most 4 digits:
1234
The sum of digits in 1234 is: 10
```

Hint : Use modulus operator (%).

Q3. Design and implement a program that takes any uppercase string and convert it to lowercase case string with capitalized initials, the string contains exactly 3 words.

Example execution:

```
Input an UPPERCASE string
JAVA IS FUN
the modified string is: Java is Fun
```

Hint : Use indexOf() and substring() methods.

Q4. Design and implement a program that takes a 4 words' string from the user then reverse its words.

Example execution:

```
Input a string to reverse
one two three four
the reverse is: four three two one
```

Hint : try it using three words first.

NOTES:

1. Due date is: **Sunday, 30 September 2007. By 08:00 a.m.**
2. Homework Submitting is through the WebCT
3. Late work is not accepted.
4. Cheating will result in **F** grade in the course.