Select exactly three problems from below and solve them.

Note : If I will find (substantially) duplicate report, I will divide the score by the number of students.

You should discuss by using your own idea and words. You may use documents on WEB as references, but please give the source of references and indicate how you use them. Otherwise, I might give a zero score.

Problem 1:

Give the definitions and relation between the following complexity classes:

P, NP, Co-NP, IP, PTAS, FPTAS, APX.

Problem 2:

Make a summary of one of topics in my lecture. (For example, summarize methods of fingerprinting).

Problem 3: Give your favorite theorem, algorithm, or concept in mathematics, and

explain why you think it interesting (or useful).

Problem 4: Explain you own research theme/topic so that a undergraduate student can easily understand (you will obtain a low score if you give a list of theorems in mathematical way).

Problem 5: Find an important application of mathematics in the current (or future) information technology or information infrastructures.

Problem 6: Discuss future of information society and how you would like to contribute to it.