

Problem Set 2

Due dates: Electronic submission of the pdf file of this homework is due on **2/7/2019 before 11:00am** on ecampus, a signed paper copy of the pdf file is due on **2/7/2019** at the beginning of class.

Name: (put your name here)

Resources. (All people, books, articles, web pages, etc. that have been consulted when producing your answers to this homework)

On my honor, as an Aggie, I have neither given nor received any unauthorized aid on any portion of the academic work included in this assignment. Furthermore, I have disclosed all resources (people, books, web sites, etc.) that have been used to prepare this homework.

Signature: _____

Make sure that you describe all solutions in your own words.

Read chapters 2 and 4 in our textbook before attempting to solve these problems.

Problem A. Solve the following subproblems of Problem A.

Problem 1 (15 points). Exercise 2.3-3 on page 39 in [CLRS].

Solution.

Problem 2 (15 points). Exercise 2.3-4 on page 39 in [CLRS].

Solution.

Problem 3 (20 points). Karatsuba's algorithm to multiply large integers was sketched in the lecture. (a) Explain how the method works with a small example (multiply $11001100_2 \times 11110111_2$). (b) Derive pseudocode for Karatsuba's algorithm.

Solution.

Problem 4 (15 points). Exercise 4.2-5 on page 82 in [CLRS].

Solution.

Problem 5 (20 points). Exercise 4.2-7 on page 83 in [CLRS]

Solution.

Problem 6 (15 points). Exercise 4.5-3 on page 97 in [CLRS]

Solution.

Work out your own solutions, unless you want to risk an honors violation!

Checklist:

- Did you add your name?
- Did you disclose all resources that you have used?
(This includes all people, books, websites, etc. that you have consulted)
- Did you sign that you followed the Aggie honor code?
- Did you solve all problems?
- Did you submit (a) the pdf file of your homework?
- Did you submit (b) a hardcopy of the pdf file in class?