

Homework 1

Assigned: Wednesday 2/2/2022

Due: 11:59PM, Thursday, 2/10/2022

Please write your solutions in detail and submit them in “.pdf”, “.docx” or “doc” format.

1. Let $a_1 = 2$, $a_2 = 9$, and $a_n = 2a_{n-1} + 3a_{n-2}$ for $n \geq 3$. Show that $a_n \leq 3^n$ for all positive integers n . **(25 pt)**
2. Solve the Exercise 3.1-8 on page 53 from CLRS. **(25 pt)**
3. Solve the Exercise 4.3-3 on page 87 from CLRS. **(25 pt)**
4. Solve the Exercise 4.5-1 on page 96 from CLRS. **(25 pt)**