Homework 2

188 200 Discrete Mathematics and Linear Algebra

Due: — Friday : July 3, 2009

Note:

1. All homework must be submitted to the submission box.
2. Submitting homework by email is no longer allowed.

Method of Proofs

Section 3.1 : 4, 16, 32

Section 3.2 : 22

Section 3.3 : 15, 24, 41

Section 3.4 : 18, 30, 36a

Section 3.5 : 13a, 24, 38

Section 3.6 : 8, 14

Set Theory

Section 5.1 : 9, 15

Section 5.2 : 31

Section 5.3 : 22, 27, 40d

Sequence and Recurence

Section 4.1 : 6, 16, 21, 22, 38

Section 8.1 : 30

Section 8.2 : 1c, 2d, 8, 20, 38a

Section 8.3 : 2, 14

Problem 1 : Consider the following recurrence relation:

$$a_k = 3 \cdot a_{k-1} + 4 \cdot a_{k-2}$$

1. Find two sequences that satisfy the relation by using characteristic equation technique.
2. Find an explicit formula of the recurrence relation with $a_0 = 1$ and $a_1 = 3$.