

CSCI 124 - Discrete Structures II - Spring 2009
Discussion Session 3: 16 September 2009

Do problems previously assigned from the text.

These problems will be completed next week if they are not completed this week.

1. Show that the set of even integers, including zero, is a group with respect to addition.

2. Is the set $\{1, 2, 3, 4, \dots, 11\}$ – with the operation of multiplication *mod* 12 – a group? If so, prove it. If not, name one property that is not satisfied, and explain why this property is not satisfied.

3. Suppose $K \in \mathbb{Z}_m$ is such that $Kx_1 = Kx_2 \pmod{m}$ for some $x_1 \neq x_2 \pmod{m}$. Show that K does not have a multiplicative inverse *mod* m .