Name: **Id#**

COE 200, Term 001
Fundamentals of Computer Engineering

Quiz# 1

Date: Saturday, September 23

Q1. Represent the following numbers in **binary** and **hexadecimal**. Use as many bits as needed, and approximate the fraction to **4 <u>binary</u> digits**:

a. $(2699.32)_{10}$

b. $(44.44)_{5}$

Q2. Determine the radix R that satisfies the following: $(365)_R = (194)_{10}$.

Q3. Consider the following two numbers **A=-98** and **B= 33**:

a. Express the two numbers in **1`s complement** and **2`s complement** notations, assuming ***8-bit representation***.

b. Perform the operation **A-B** two times, once using **1`s complement notation** and once using **2`s complement notation**.

c. Determine, in **<u>binary</u>** and **<u>decimal</u>**, the *smallest (negative)* number and the *largest (positive)* number that can be stored using the **2`s complement notation**, assuming ***12-bit representation***.