CS480-580 - Homework 1

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This Homework, **to be done individually**, carries 5% percent of the total grade. Please note, that in this assignment you must show all work (for example each stage of matrix multiplication) to get full credit.

Question 1: (5 points) Multiply any two orthogonal matrices for 3D rotations in Chapter 5, for example any two rotation matrices. Show that the resultant matrix is also orthogonal.

Question 2: (10 points) Question 5-2 from Chapter 5.

Question 3: (20 points) Verify the transformations developed in Section 5.7 (Chapter 5) for P1=(1,1,1), P2= (3,4,4), and P3= (2,4,5). Calculate the transformations for both the methods and show that these points transform as desired.

Question 4: (20 points) Problem 5-11 from Chapter 5.

Question 5: (20 points) Problem 5-14 from Chapter 5. Note: direction cosines are defined in Problem 5.8.