**CSCI 4250 Fall 2011** **Name _____**
**Homework 9 (Due beginning of class Monday Nov 7th)**

1. (20 pts) Compute the Current Matrix (CT) after the following code segment is executed:

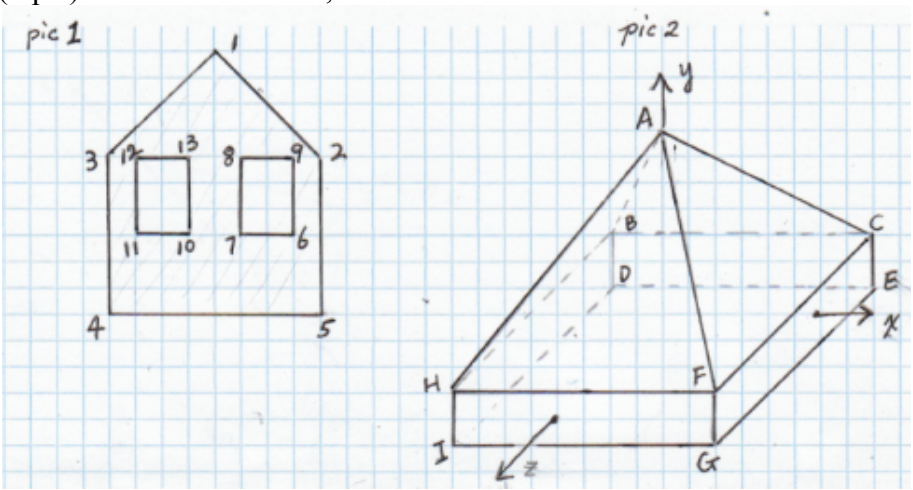
```
glMatrixMode(GL_PROJECTION);
glLoadIdentity();
glOrtho(-20, 20, -10, 10, 0.1, 100);

glMatrixMode(GL_MODELVIEW);
glLoadIdentity();
gluLookAt(3, 6, 2, 1, 2, 0, 0, 1, 0);

glTranslate(2, 1, 1);
glRotate(30, 0, 0, 1);
```

   Show all the steps involved in computing the view matrix, the model transformation matrix, as well as the final composite CT

2. (5 pts) Given Pic 1 below, show the order of vertices traversed in CCW rotation.




   A=(0, 6, 0), B=(-4, 1, -1), C=(6, 1, -1), D=(-4, -1, -1), E=(6, -1, -1), F=(6, 1, 4), G=(6, -1, 4), H=(-4, 1, 4), I=(-4, -1, 4)

3. (35 pts) Given the 3D mesh object in Pic 2, show:
   a. The vertex list
   b. The normal list. Compute the normals of the faces using Newell's method. Show computation steps involved.
   c. The face list. Each face should include the vertex (index) list, as well as the normal (index) list.

4. (40 pts) Download the extruded mesh program from the course web site. Modify the program to produce a extruded capital letter, e.g., F. Turn in a screen shot of your program output.