CSCI 4250/5250 Homework 1
Due beginning of class, Wednesday September 5th **Name_____**

1. Read chapters 1 and 2 of the textbook

2. How many bits per second must be delivered to a graphics display that is refreshed 60 times per second, when the display has a resolution of 600 x 800 pixels, and each pixel can be displayed in one of 65000 colors?

3. Compile the cube program discussed in class on your choice of platform for OpenGL programming. Modify the program to draw the cube in a color of your choice. Turn in a screen shot of your program output. (Make sure to label it with your name).

4. Describe what each of these OpenGL extensions provide
   GLU
   GLUT
   GLUI

5. What is a callback?

6. Describe the purpose of each of the following OpenGL/GLUT/GLU functions. Be specific and describe what the arguments will cause to happen.

```
glutInitWindowSize(400, 600);

glutMainLoop();

glClearColor(0.0, 1.0, 0.0, 1.0);

glClear(GL_COLOR_BUFFER_BIT);

glColor3f(1.0, 1.0, 0.0);

gluOrtho2D(-3.0, 3.0, -1.0, 1.0);
```

7. Consider the skeleton of an OpenGL program shown below. Fill in the appropriate parameters in the blanks and write additional functions necessary to produce a drawing of a polyline with vertices (0.0, 0.0), (1.0, 0.0), (1.0, 1.0), and (2.0, .5). The background color should be blue and the foreground color should be white. The window size should be 500 X 500, appears at location 50 rows and 20 columns down from the upper left corner of the screen, and should have "Polyline" on the title bar. (14 points)

```
#include <GL/glut.h>
void myinit()
{
        glClearColor (_____, _____, _____, _____);
        glColor3f (_____,_____,_____);
        glMatrixMode (GL_PROJECTION);
```

```
	glLoadIdentity();
	gluOrtho2D(________, __________, __________, _________);
	glMatrixMode (GL_MODELVIEW);
}

int main(int argc, char** argv)
{
	glutInit(&argc, argv);
	glutInitDisplayMode( GLUT_SINGLE | GLUT_RGB);
	glutInitWindowSize(__________________, __________________);
	glutInitWindowPosition(_________________,_________________);
	glutCreateWindow(_____________________________);
	glutDisplayFunc(_____________________________);
	myinit();
	glutMainLoop();

	return 0;
}

//Place your functions below
```