Coms 331   **The View Frustum**   **Fall 2007**

Homework 10

Use the program `Lecture 3 Demo 1.cpp`.

1. In the `reshape()` function, in the `gluPerspective()` function call, change the field-of-view angle to 90°.

2. Change the field-of-view angle to 10°. After running the program, change it back to 45°.

3. Change the aspect ratio to 5.0. After running the program, restore it to its previous value.

4. Increase the distance to the near plane until the yellow cube no longer appears in the scene. Then change it back to 1.0.

5. Decrease the distance to the far plane until the yellow cube no longer appears in the scene. Then change it back to 1000.0.

6. In the `setView()` function, in the `gluLookAt()` function call, change the "up" vector from $(0.0, 1.0, 0.0)$ to $(1.0, 1.0, 0.0)$ and run the program. Then change it to $(0.0, -1.0, 0.0)$. Then restore it to $(0.0, 1.0, 0.0)$.

7. In the `display()` function, reverse the order of the `setView()` and `drawAxes()` function calls. What is the effect? Restore them to the their original order.

8. Change the value of `zoomFactor` to 2.0 and the values of `yawIncr` and `pitchIncr` to 10.0. What is the effect when you use the keyboard controls?