COMPUTER SCIENCE 3710
Computer Graphics
Assignment #3

Due: Thursday March 29, 2012 at 11:59 p.m.   Spring 2012

Late Penalty: -15% per day late

Flying through Butterfly-land

Add the following to your previous assignment.

Enable culling and depth buffering.

The user will fly around your world using the cursor keys which will determine the nose change (pitch and yaw), and the *space* key (32) which will move forward, and the *b* key which will move backwards. Use *n* and *m* to roll.

As discussed in class, it is best to maintain three arrays:
`VRP` – the eyepoint,
`VPN` – a vector pointing forward, and
`VUP` – a vector pointing up.
And compute the required normal when you need it via the crossproduct.

To use the cursor keys, use the function:
`void SpecialKeyboard(int key, int x, int y)`
and register it with:
`glutSpecialFunc(SpecialKeyboard);`
The keys are named:
`GLUT_KEY_UP` etc.

The file `/home/lib3710/lect/matrix.txt` contains code for rotating about an arbitrary axis – to change `VPN` and `VUP`.

Bonus Marks: (2 extra marks out of 20). Add lighting with material properties to your object at the world origin – use the *l* key to toggle lighting on and off.