

The background features abstract green geometric shapes. On the left is a tall, narrow, light green triangle pointing downwards. On the right is a larger, more complex shape composed of several overlapping triangles in various shades of green, ranging from light to dark. A thin, light gray line extends from the bottom left towards the right, passing behind the green shapes.

Lab 12

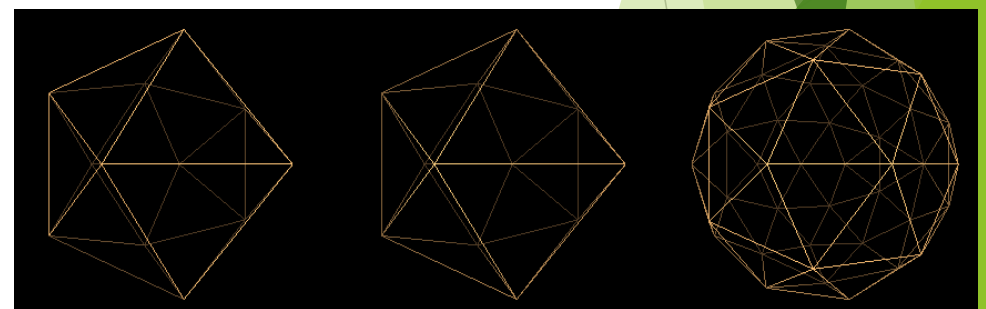
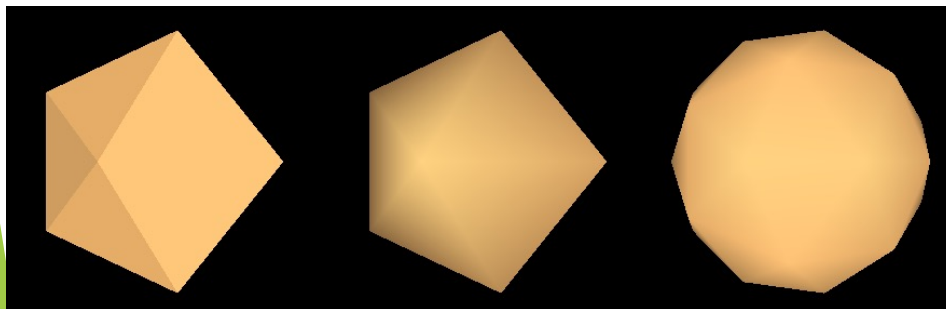
Lighting and Subdivision

Lighting and Subdivision

- ▶ Drawing the Icosahedron (20 triangle faces)
- ▶ 3 viewport for displaying three different modes (Flat, Interpolate, Subdivide)

```
#define X .525731112119133606
#define Z .850650808352039932
static GLfloat vdata[12][3] = {
    {-X, 0.0, Z}, {X, 0.0, Z}, {-X, 0.0, -Z}, {X, 0.0, -Z},
    {0.0, Z, X}, {0.0, Z, -X}, {0.0, -Z, X}, {0.0, -Z, -X},
    {Z, X, 0.0}, {-Z, X, 0.0}, {Z, -X, 0.0}, {-Z, -X, 0.0}
};
```

```
static GLuint tindices[20][3] = {
    {1,4,0}, {4,9,0}, {4,9,5}, {8,5,4}, {1,8,4},
    {1,10,8}, {10,3,8}, {8,3,5}, {3,2,5}, {3,7,2},
    {3,10,7}, {10,6,7}, {6,11,7}, {6,0,11}, {6,1,0},
    {10,1,6}, {11,0,9}, {2,11,9}, {5,2,9}, {11,2,7}
};
```



► Keyboard Control

- Rotate along the center: (left-right & up-down)
- Polygon mode: (Line, fill)
- Subdivide depth (+ , -)

