Names: _____, _____

Lab 8 Shaders Workshop

WORK IN TEAMS OF TWO.

1a. Draw a **line** from the elements to their proper place in the OpenGL pipeline.

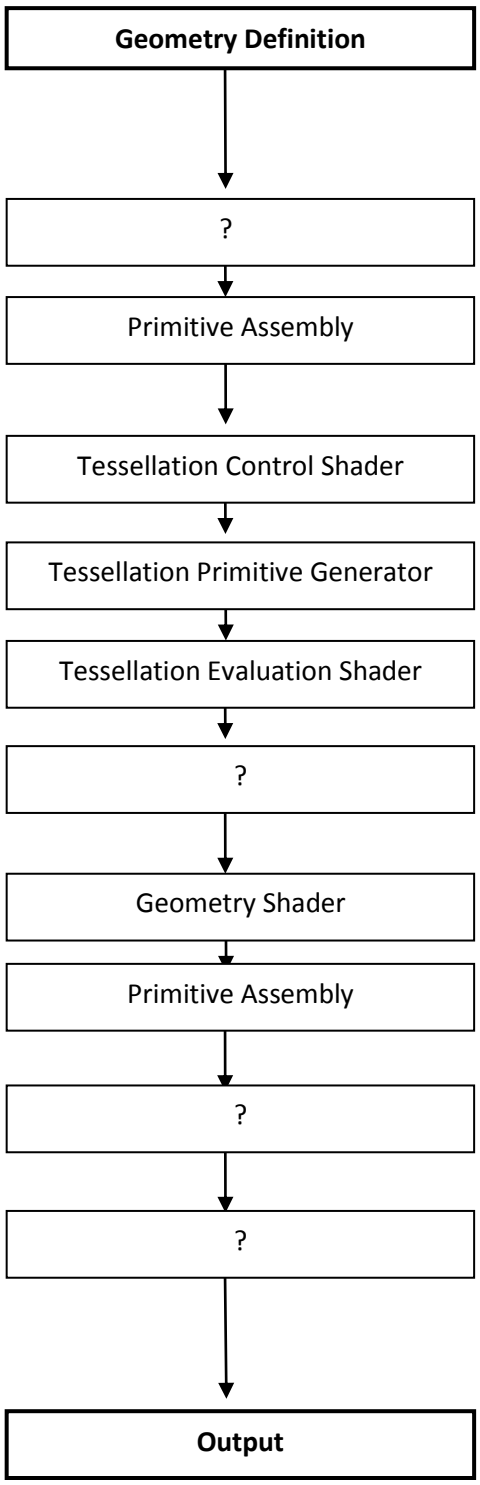
b. Draw a **star** next to the stages of the pipeline which are *programmable*. Draw a **square** next to those stages which are fixed-function.

Fragment Shader

Primitive Assembly

Rasterizer

Vertex Shader



2. Annotate the following functions below according to where they are typically done:

	Vertex transformations
	Viewport mapping
	Depth test
	Normal transformation
	Color computation
	Backface culling
	View volume culling
	Texturing
	Per-vertex lighting
	Per-pixel lighting
	Normal normalizations
	Discarding pixels in fragments
	Texture coordinates

V *if it is typically done in the vertex shader*

F *if it is typically done in the fragment shader*

FP *if it is still done by the fixed pipeline*

3a. In one sentence, explain "in" and "out" variables in GLSL.

b. In one sentence, explain what a "uniform" variable is in GLSL.

4. Fill in this Venn Diagram with **at least** six statements about the language features of C/C++ and GLSL

Label Diagram on left - GLSL

Diagram on right C/ C++