

# Klein

## **Assignment 1:**

The modified picture of the Maine tree.

## **Assignment 2:**

This assignment was to program algorithms for creating fractals.

An image of a Julia set.

Another fractal image.

## **Assignment 3:**

This assignment was coding graphics primitives. Graphics primitives allow for the creation of simple images, but are also useful later on in creating polygons.

An image of a car, made using just lines and circles. Unfortunately, this model only comes in gray.

This is the result of our flood fill algorithm, which was coded to fill "more red" as it shades.

## **Assignment 4:**

This assignment was to code polygons and the scanfill algorithm, to make coding and rendering images much easier.

A sweet rocket ship, preparing for take off. This would have taken 14 lines to design using primitives, but only three polygons using the new polygon class.

Our flood fill algorithm was used to make the back layer filled with a pattern, the next layer is transparent, and the top layer is the normal opaque.

This illustrates how the flood fill algorithm has many different applications.

## **Assignment 5:**

This assignment was to code transformation matrices, to allow different types of transformations on polygons.

The space ship was designed from transforming unit polygons, and then coded to rotate around a planet.

## **Assignment 6:**

This assignment was to code modules to allow multiple instances of an object within the same image.

A flock of ducks.

Pac Man running from some ghosts.

## **Assignment 7:**

This assignment was to create 3D transformations and viewing.

A cube drawn in 3D perspective viewing at different rotations.