Abhinav Das-61539128

**Project 1b**

CAP 5705

Task 3

A=1/3

B=7/12

C=1/12

The formulas for the control points are as follows

Ci,0 = (Pi-2 + 11Pi-1 + 11Pi + Pi+1)/24

Ci,1 = (4Pi-1 + 7Pi + Pi+1)/12

Ci,2 = (4Pi-1 + 16Pi + 4Pi+1)/24

Ci,2 = (Pi-1 + 7Pi + 4Pi+1)/12

Ci,0 = (Pi-1 + 11Pi + 11Pi+1 + Pi+2)/24

Task 5

No, the points will not form a circle.

If 8 points are uniformly distributed on a circle

We will be able to form 4 curves of degree 2.

Let’s label the points from P0 ……P7

The four pieces will have the following control points

P0,P1,P2

P2,P3,P4

P4,P5,P6

P6,P7, P0

The endpoints of the Bézier curve must coincide with the endpoints of the circular arc, and their first derivatives must agree there.

So at the point where the first two curves connect i.e P2

For the first derivative to be true P2- P1= P3- P2

This is not satisfied for the original 8 points which is used in my project.

Therefore, a circle will not be the final curve.

Also, for each curve the midpoint of the Bézier curve should lie on the circle. Upon calculating this result is also not validated for the points which I have chosen for my Project.