Gauss-Bonnet (Global)   **John Waczak**

MTH 435   Date: May 15, 2018

Dr. Christine Escher

6A

b. Questions

I think I understand the section pretty well but I'm a little confused about the $\sum \alpha_i$ which the Tapp says is the sum of all vertices of all boundary components of R. I thought this was supposed to refer to external angle as in the local Gauss Bonnet so that was a bit confusing. Secondly, I think I followed the proof for how the geodesic and Gaussian curvatures were summed over the triangulation but again I had a bit of difficulty with how the A section on page 350 was expanded.

c. Reflections

I think this section is very interesting and I'm excited to try and put some triangulations on some surfaces. Since this is true for any Regular region of a Regular Surface will we get the same result if we take a triangulation over a small region as opposed to over the entire surface – for example with the sphere could we just triangulate over say one octant and get the same answer as if we had triangulated the whole thing?

d. Time

I took roughly 1 hour(s) to read this section.