

Wednesday (HW)

-Allison (relationship #1): Sum of what angles should be in Euclidian Geometry – sum of the actual angles.

-McCrory:  $180 - (\text{sum of the 3 angles (deficit)})$

-Sum is always less than 180 because each angle is always less than 60 degrees. (this works for non-Euclidian geometry also).

-Area has additive congruence properties. We do not have a reference to scale the area to; therefore, you can scale the area any way as long as it is proportional. No unit square with area =1.

-Allison scaled it to degrees.

-Any triangle, angle deficit is proportional to the area

-Mandy (hexagon):

-Smaller figure---closer to connecting

-Larger figure---bigger discrepancy

Question: Will it ever be so small that it touches?

McCrory: No, it will never touch.

-Equilateral Triangle,

- perpendicular bisector, construct circumcenter where circumcircle and perpendicular bisectors intersection are your new side

-McCrory: What are the inside angles of a equilateral triangle?

-60 degrees

-In Euclidian geometry, hexagon is the union of 6 equilateral triangles

-In hyperbolic, there cannot be 6 triangles because the angles would add up to 360 degrees, but equilateral triangles do not; therefore, it leaves a gap.

Question: My opposite angles were equal, but not all of them, why?

McCrory: So you constructed a non-regular kite.

\*\*Which axioms hold true in Hyperbolic Geometry: SAS congruence

-Quadrilaterals are broken up into 4 right triangles, vertices all lie on the hyperbolic circle.