Advanced Topics in Geometry B1 (MTH.B406)

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Q and A

Q: The integral of the curvature of a curve is an angle (exterior angle), but is there any name for the integral of the Gaussian curvature of a surface? It is different from solid angle, isn't it? (For example, how can I say that each vertex of a regular polyhedron with n vertices has an "exterior angle" of $4\pi/n$?)

Q and A

Q: Isn't a surface with constant Gaussian curvature of 1 called a spherical surface?

A: Yes.

Q: If Example 2.7 is "Beltarmi's" pseudosphere, does that mean there are other pseudospheres? What characterizes a pseudosphere from other pseudosurfaces?

Q and A

Q: As the hyperbolic plane is “hyperbolic”, hyperbolic functions appear in the Pythagorean formula and Beltrami’s pseudosphere. Is this because hyperbolic functions appear in the solution of differential equations, as in problem 2-1? (I thought this was in contrast to the fact that trigonometric functions appear when K is positive.)