

MA430 Differential Geometry

Lia Vas, Ph.D.
l.vas@uscience.edu

STC 244
www.uscience.edu/~lvas/

Had fun with Calculus 3 & still in the mood for more related material?

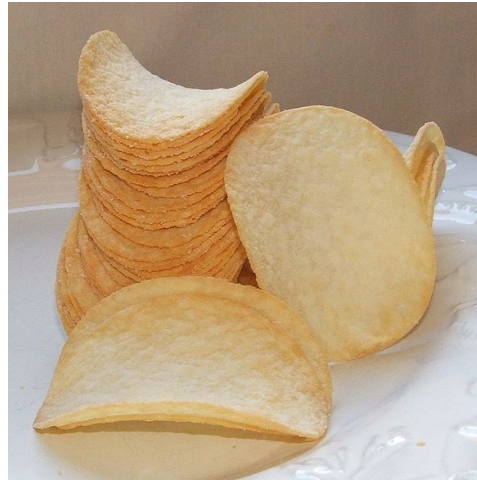
After a review of some Calculus 3 topics, MA430 covers some mathematical background needed for understanding certain area of physics or computational chemistry.

- Curves in space and their curvature and torsion
- Surfaces in space and their coordinate patches, Gaussian curvature, Fundamental Forms
- Tensors, Manifolds and their curvature

and answers the following questions.



Can the triangle angles add up to 270 degrees?

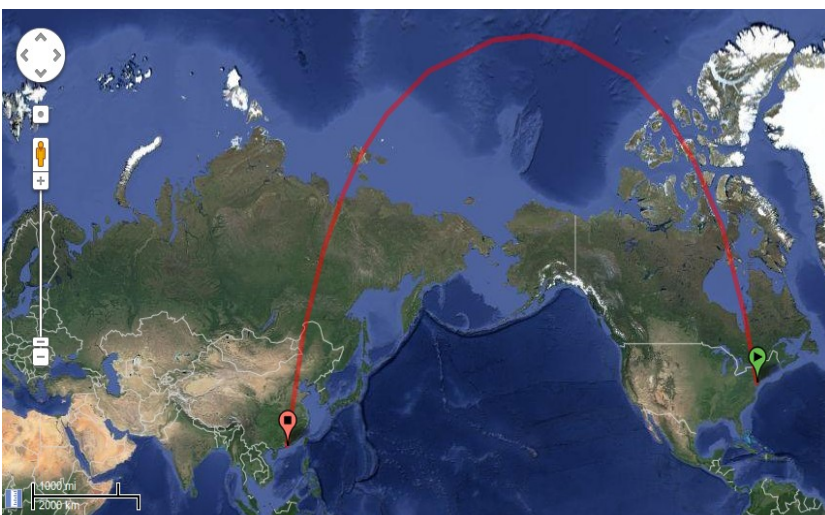


Why is this negatively curved?



Do all lines intersect?

Philadelphia to Hong Kong: Is this really the shortest route?



Prerequisite:

Calculus 3 (Mathematical Analysis IV) or any Calculus 3 equivalence.

Mathematics

Minors:

MA 430 can be used as a minor elective.