Space: Its Light, Its Shape.

Chapter 16: Geometries on Three-Manifolds I

Assignment: For

- Read Chapter 16.
- Though everyone is responsible for reading all of the material and for working out all of the exercises, teams have been assigned specific material and exercises for which they are responsible in class presentations. You may want to come to class early to firm up and smooth out the exercises with your teammates.

Team 1: What is a dodecahedron. Use it to describe Seifert-Weber space. What type of geometry does admit? Why?

Team 2: Describe Poincaré dodecahedral space. What type of geometry does admit? Why? What geometry does the three-torus admit?

Team 3: Do all three-manifolds admit one of these three geometries? What is $S^2 \times S^1$? How do we know that $S^2 \times S^1$ does not admit Euclidean, hyperbolic or eliptic geometry? (You will want to review Chapter 6 for much of this.)

Team 4: Present Exercise 16.1.

Team 1: Present Exercise 16.2.

Team 2: Present Exercise 16.3.