Well-known results in Geometry

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Contents

1. Grassmannian is a homogeneous space (quotient of Lie group) $Grass(k, n) = O(n)/(O(k) \times O(n-k))$ of dimension $k(n-k)$.
2. Kervaire (1961) found a topological manifold that has no differential structure.
3. Classification of surfaces: Topological equivalence implies differential equivalence.

haha

1 TODO Levels of classification:

1. Homology: Betty numbers, etc...
2. Homotopy type
3. Homeomorphy
4. Diffeomorphy: Quotient Diffeo/ Homeo is finite when dimension > 4.

2 TODO Riemann submersion

3 TODO Normal coordinates in Riemannian behaves nicely

4 TODO Curvature

Emacs 25.2.1 (Org mode 9.0.5)