1. Find a parametric representation for a “circular doughnut”.

2. Give concrete examples for all possible ways an immersion can fail to be an embedding.

3. Let $M_m \subset \mathbb{R}^n$ be an $m$-dimensional $C^1$-manifold. Show that the tangent space to $M_m$ at any point $x \in M_m$ does not depend on the choice of local representation $g$ for the manifold.

4. Consider an ideal point on a wheel of radius $R$ located at distance $r \leq R$ from its center. Parametrize the curve traced by this point as the wheel is rolling along a horizontal line.

5. You ask a question.

The Homework is due Friday, May 16.