

Math 341 Quiz topics for Week 6

Let M be an n -manifold.

- Let $p \in M$. Describe the standard basis, $(\partial/\partial x_1)_p, \dots, (\partial/\partial x_n)_p$ for $T_p M$ in three ways (corresponding to the three interpretations of tangent space).
- Using the notation of the previous problem, what is $dx_{i,p}$?
- What is a differential k -form on M ?
- Compute the exterior derivative of a given k -form on \mathbb{R}^n .
- What is an orientation on M ?
- Suppose that M is oriented and $\omega \in \Omega^n M$. What is the definition of $\int_M \omega$.