

Math 341 Quiz topics for Week 6

- What is a general *vector bundle*  $\pi: E \rightarrow M$  of *rank*  $k$  on a manifold  $M$ ?
- What is a *section* of a vector bundle  $\pi: E \rightarrow M$ ?
- Describe the construction of the tangent bundle  $\pi: TM \rightarrow M$  on a manifold  $M$ .
  - What are the fibers,  $\pi^{-1}(p)$ ?
  - What are the charts for  $TM$ ?
  - If  $(U, h)$  and  $(V, k)$  are charts on  $M$ , what is the transition function from  $\pi^{-1}(U)$  to  $\pi^{-1}(V)$  on  $TM$ ?