

Week 3 (due Jan. 28)

1. Problem 5.1 in Morita.
2. Let $\{g_{\alpha\beta}\}$ be the gluing cocycle for the vector bundle E of rank n . What is the gluing cocycle for E^* ? What is the gluing cocycle for the top exterior power of E , i.e. $\Lambda^n E$?
3. Show that the real vector bundle E of rank n is orientable if and only if $\Lambda^n E$ is trivial.
4. Show that any complex vector bundle of rank 1 over S^1 is trivial.