1. (2 points) In your own words, give a careful proof of Lemma 6.17: If $M$ is a connected smooth manifold, any two points of $M$ can be joined by a piecewise smooth curve segment.

2. (1 point) Problem 6-9 (page 152)

3. (3 points) Problem 6-10 (page 153)

4. (2 points) Problem 11-1 (page 286)

5. (2 points) Problem 11-2 (page 286)