

**UH - Math 7350 - Dr. Heier - Spring 2016**  
**HW 4**  
**Due Wednesday, 04/20, at the beginning of class.**

**Use regular sheets of paper, stapled together.**  
**Don't forget to write your name on page 1.**

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)