

Math 8062 Homework 11

Due Monday, 5/7/18

(The following problems refer to the second edition of Lee's book. Let me know if you need references to the first edition.)

1. Do problem 16-3(a) on page 435 of Lee. Then, interpret the result in terms of the degree of the map π .
2. Do problem 17-1 on page 465 of Lee.
3. Do problem 17-12 page 466 of Lee.
4. Use Poincaré Duality to show that $\chi(M) = 0$ for every closed manifold of odd dimension. *Hint:* Poincaré Duality requires the underlying manifold to be orientable. How do you show that $\chi(M) = 0$ for nonorientable manifolds?