

**INTRO TO ALGEBRAIC TOPOLOGY**  
**HOMEWORK 6 DUE MARCH 12**

Turn in the following:

- (1) Hatcher Exercise 1.3.10 (p. 79)
- (2) Hatcher Exercise 1.3.18 (p. 80)
- (3) Let  $n \geq 3$  be a natural number. Prove that the free group on two generators has a subgroup that is isomorphic to the free group on  $n$  generators.
- (4) Hatcher Exercise 1.3.20 (p. 81)
- (5) Hatcher Exercise 1.3.24 (p. 81)

Think about the following (but do NOT turn in):

- Hatcher Exercise 1.3.11 (p. 80)