

## Math 227A: Suggested Exercises Week 1

1. Send me an e-mail letting me know how comfortable you are with homotopy theory, for purposes of speed calibration.
2. Do exercises 4.1.1-5, 4.1.8 in Hatcher.
3. Let  $X$  be connected. Express the set of unbasepointed maps  $f : S^n \rightarrow X$  up to homotopy, written  $[S^n, X]$ , in terms of the groups we have defined in class.