

Math 31BH Winter 2018 Written Homework 3, due  
2/9/2018 in HW box in the basement of AP&M by  
4 pm

## Reading

Finish reading Section 3.2 and read Sections 3.3-3.5.

## Exercises to submit on Friday 2/9

### Exercises from the text

Write out each answer as a careful proof, in full sentences.

**Section 2.3:** #14

**Section 3.1:** #10, 13

**Section 3.2:** #7, 11(a), 14, 17, 18

*Remarks:* for 2.3 #14, sometimes a good way to show a set  $U$  is open is to find a continuous function such that  $U$  is the preimage of some open set under that function. A similar technique can work for closed sets. Remember that we showed in class that polynomial functions are always continuous at any point.

### Additional problems for practice, not to be handed in

**Section 2.3:** #6, 15

**Section 3.1:** #4, 5, 9, 11, 12

**Section 3.2:** #6, 9, 10, 13, 19