Eleventh Homework: MATH 410
Due Monday, 12 November 2018

1. Exercise 1 of Section 6.1 in the text.
2. Exercise 3 of Section 6.1 in the text.
3. Exercise 6 of Section 6.1 in the text.
4. Exercise 7 of Section 6.1 in the text.
5. Exercise 2 of Section 6.2 in the text.
6. Exercise 4 of Section 6.2 in the text.
7. Exercise 6 of Section 7.3 in the text.
8. Exercise 10 of Section 7.3 in the text.
9. Exercise 11 of Section 7.3 in the text.
10. Exercise 12 of Section 7.3 in the text.
11. Prove (9.5) on page 2 of the lecture notes.
12. Prove the last assertion of Lemma 9.3 in the notes.
13. Prove Theorem 9.4 in the lecture notes.
14. Prove Theorem 9.5 in the lecture notes.
15. Prove formula (10.7) in the lecture notes for the case $p = -1$.
16. By taking the limit of Riemann sums, show for every positive a and b that
$$\int_0^b a^x \, dx = \frac{a^b - 1}{\log(a)} \, .$$
    Hint: Use uniform partitions.