MATH 180A HOMEWORK #5

Due Wednesday, November 21st, by 12 pm in the AP&M basement dropbox for our class. Make sure you put your homework in the box that corresponds to your TA. For full credit, you must justify your answers. For example, the level of justification in the examples in the textbook would warrant full credit.

1. ASV Exercise 3.18
2. ASV Exercise 3.67
3. ASV Exercise 3.71
4. ASV Exercise 4.14
5. ASV Exercise 4.48
6. ASV Exercise 4.49
7. ASV Exercise 4.50
8. ASV Exercise 6.6
9. ASV Exercise 6.18
10. ASV Exercise 6.34
11. ASV Exercise 6.36
12. (OPTIONAL) Suppose that $X \sim \text{Unif}([-1, 1])$. Find the density of the random variable $Y = e^{X^2}$.
13. (OPTIONAL) ASV Exercise 6.33
14. (OPTIONAL) ASV Exercise 6.37
15. (OPTIONAL) Suppose that $X \sim \mathcal{N}(0, 1)$. Find a simple formula for $\mathbb{E}(|X|^{2n+1})$, where $n \geq 0$ is an integer.
16. (OPTIONAL) ASV Exercise 6.57