00102721: Advanced Theory of Statistics II Fall 2026

Homework 2

1. Problem 20.4 of van der Vaart
2. Problem 20.6 of van der Vaart
3. Let $Z \sim N(0, \sigma^2)$. Show that
$$\sup_{t>0}\left\{P(Z \geq t)e^{t^2/(2\sigma^2)}\right\} = \frac{1}{2}.$$
4. Exercise 2.3 of Wainwright
5. Exercise 2.5 of Wainwright
6. Exercise 2.12 of Wainwright
7. Exercise 2.14 of Wainwright
8. Exercise 2.18 of Wainwright
9. Exercise 3.13 of Wainwright
10. Exercise 3.16 of Wainwright
11. Exercise 6.4 of Wainwright
12. Exercise 6.8 of Wainwright
13. Exercise 6.10 of Wainwright
14. Exercise 6.15 of Wainwright