Homework 4

Due: 11:59pm, Thursday, March 3

Instruction: Please scan or typeset your solutions and upload them as a single pdf file to Canvas. Do not just take a picture of your solutions.

0. Readings: Sections 5.1, 5.2, 5.3, 5.4, 5.5

1. Section 5.6: 2 (a) (b)

2. Section 5.6: 3 (a)

3. Section 5.6: 6

4. Section 5.6: 7; In additional to compute the probabilities, also express the answers in the standard normal cdf $\Phi(\cdot)$.

5. Section 5.6: 8

6. Draw the pdfs of $N(0,1)$, $t(3)$, $t(10)$ and Cauchy distributions in one graph, and **Comment** on the figure.

7. Brief describe the relationships among the following distributions: $N(\mu, \sigma^2)$, $N(0,1)$, $\chi^2(n)$, $t(\nu)$, $F(\nu_1, \nu_2)$, Cauchy, and $U(0,1)$.