Homework 5 - October 20, 2016. Questions.

Intermediate Statistics (Carnegie Mellon University)

Homework 5
36-705
Due: Thursday October 20 by 3:00

1. Chapter 9, problem 1.

2. Chapter 9, problem 5.

3. Chapter 9, problem 6 (a,c,d,e).

4. Chapter 9, problem 7 (a,b,c).

5. Let θ be a scalar parameter.

   (a) Let $\psi = g(\theta)$ where g is a smooth, invertible function. Hence, $\theta = h(\psi)$ where $h = g^{-1}$. Let $I(\theta)$ denote the Fisher information for θ and let $I(\psi)$ denote the Fisher information for ψ. Show that $I(\psi) = I(\theta)(h'(\psi))^2$.

   (b) Let $X \sim N(\theta, 1)$ and let $\psi = e^\theta$. Find the Fisher information for ψ.