

Summary to Hw4

- 6.1
- Some students used Theorem 6.2.2. For this problem, using Factorization Theorem would be easier.
 - Some students got wrong distribution for $T(X) = |X|$.

6.2 The distribution for $\underline{\mathbf{X}}$ is

$$f(\underline{\mathbf{X}}|\theta) = e^{\frac{n(n+1)}{2}\theta} I_{(\theta, \infty)}(T(X)) e^{-\sum x_i}$$

Some students got

$$f(\underline{\mathbf{X}}|\theta) = e^{in\theta} I_{(\theta, \infty)}(T(X)) e^{-\sum x_i}$$

- 6.3 One of the sufficient statistic is $\min_i X_i$. Some students got $\max_i X_i$.
- 6.4 One of the terms in $f(\underline{\mathbf{X}}|\theta)$ is $\frac{1}{(2\theta)^n}$. Some students got $\frac{1}{2\theta}$ for this term.
- 6.9 (b) Some students got \bar{X} as minimal sufficient statistic. The correct minimal sufficient statistic is $\min\{X_i\}$.
- (c) The minimal sufficient statistic is the order statistic. To show that order statistic is minimal sufficient we need to show $x_{(i)} = y_{(i)}$. Some students only showed $x_i = y_i$ which is not the order statistic.
- 6.10 Some students got wrong distributions and means for $X_{(1)}$ and $X_{(n)}$.
- 6.26 (a) We need to show that $\frac{f(\underline{\mathbf{X}}|\theta)}{f(\underline{\mathbf{Y}}|\theta)}$ is constant as a function of θ . Some students showed that $\frac{f(\bar{\mathbf{X}}|\theta)}{f(\bar{\mathbf{Y}}|\theta)}$ is constant as a function of θ .