Homework 4

1. Briefly describe any advantages of using sufficient, minimally sufficient, and/or complete statistics.
2. If you know a statistic is complete, do you automatically know its sampling distribution?
3. Exercise 6.15. Hint: For 6.15b, consider the function $g(\bar{X}, S^2) = \left(\frac{n}{a+n}\right)\bar{X}^2 - \frac{S^2}{a}$
4. Exercise 6.20 a, c. Hint: 6.20a, this is not an exponential family and you will want to include an explicit indicator function for the support of the distribution.
5. Exercise 6.22
6. Exercise 6.30b. You can assume that $X_{(1)}$ is a complete sufficient statistic from a.