Homework #8 (due December 6, 2012)

1. Let $(x_1, \ldots, x_n)$ be a sample from a population with pdf

$$p(x; \theta, m) = \frac{1}{m\theta^{m+1}} x^m e^{-x/\theta},$$

with $\theta > 0$, $m = 1, 2$ as parameters.
(i) Find the minimal sufficient statistic for (θ, m).
(ii) Develop the MLE of θ, prove its consistency and find its non-degenerate limit distribution as $n \to \infty$.

2. Ch. 6, Problems 2, 3, 4.