From WMS, do 10.66, 10.73, 10.79, and 10.84. For each problem, ignore “Applet Exercise” parts and “bound p-value” parts. Just use R to calculate p-values exactly if needed. Also, complete the following extra problems (EP).

EP1. Do Problem 10.95 as stated in WMS. In addition, complete the following parts:
(c) Obtain an expression for the power function $K(\theta)$ using the UMP level $\alpha$ rejection region in part (b). Use R to graph the power function when $\alpha = 0.01$, $\theta_0 = 3$, and $n = 4$.
(d) Take $\alpha = 0.01$ and $\theta_0 = 3$ as in part (c). Find the smallest sample size $n$ that guarantees $K(4) \geq 0.90$.

EP2. Do Problem 10.102 as stated in WMS. In addition, complete the following parts:
(d) Suppose that $n = 60$ and $p_0 = 0.30$. In part (a), find the value of $k^*$ that makes $\alpha$ as close to 0.05 as possible.
(e) For $n = 60$, $p_0 = 0.30$, and the $k^*$ you obtained in part (d), find an expression for the power function $K(p)$. Use R to graph the power function.