

Suggested Problems 6

- (1) Let $X_n \stackrel{iid}{\sim} \text{Geometric}(p)$ so that $f(x) = p(1-p)^{x-1}$ for $x = 1, 2, 3, \dots$. Find the CRLB for p .
- (2) Let $X_n \stackrel{iid}{\sim} \text{Geometric}(p)$ so that $f(x) = p(1-p)^x$ for $x = 0, 1, 2, 3, \dots$. Find the MLE and CRLB for p .
- (3) Let $X_n \stackrel{iid}{\sim} f_\theta$ where

$$f_\theta(x) = 2\theta x \exp(-\theta x^2).$$

Find the CRLB for θ .

- (4) Let $X_n \stackrel{iid}{\sim} f_\theta$ where

$$f_\theta(x) = \frac{\theta}{(1+x)^{\theta+1}} \text{ for } x > 0.$$

Find the CRLB for θ .