K	Obs.	exp. $= (.3418)^{K-1}(.6582)$
1	678/1011 = .6706	.6582
2	227/1011 = .2245	.2249
3	56/1011 = .0554	.0769
4	28/1011 = .0277	.0262
5	8/1011 = .0079	.0089
6	14/1011 = .0138	.00307

Reasonably approximates data

5.2.12. $f_Y(y;\theta) = 2y/\theta^2$, $0 \le y \le \theta$

$L(\theta) = \prod 2y/\theta^2 = (2y_1/\theta^2)(2y_2/\theta^2)\cdots(2y_n/\theta^2)$

$L(\theta) = 2^n \prod y/\theta^{2n}$

$\ln L(\theta) = n \ln 2 + \ln \prod y - 2n \ln \theta$

$\partial/\partial\theta \ln L(\theta) = 0 + 0 - 2n/\theta$

$0 = -2n/\theta$; $\theta = y_{max}$ to get function as close to zero as possible

5.2.22 $f_Y(y;\theta) = \theta K^\theta \left(\frac{1}{y}\right)^{\theta+1}$ $y \ge K$; $\theta \ge 1$

$E(Y) = \int_K^\infty y \cdot \theta K^\theta \left(\frac{1}{y}\right)^{\theta+1} dy = \theta K^\theta \int_K^\infty y^{-\theta} dy$

$\theta K^\theta \left(\frac{-y^{-\theta+1}}{-\theta+1} \Big|_K^\infty \right)$

$\theta K^\theta \left(0 - \frac{K^{-\theta+1}}{1-\theta}\right)$

$= \theta K^\theta \left(\frac{K^{-\theta+1}}{\theta-1}\right) = \frac{\theta K}{\theta-1}$