6.1)

$l(x,\lambda)=-n\lambda+ln\lambda^{\sum x_i}-ln\prod x_i!$

$I(\lambda)=E(\frac{\sum x_i}{\lambda^2})=n/\lambda$

$\therefore \pi(\lambda)=\sqrt{\frac{n}{\lambda}}$

6.2)

$f(x,\theta)=\theta^x(1-\theta)^{n-x}$

$l(\theta)=xln\theta+(n-x)ln(1-\theta)$

$I(\theta)=E(x/\theta^2-(n-x)/(1-\theta)^2)=\frac{n}{2}(\frac{1}{\theta^2}-\frac{1}{(1-\theta)^2})$

$\therefore \pi(\theta)=\sqrt{\frac{n}{2}(\frac{1}{\theta^2}-\frac{1}{(1-\theta)^2})}$

6.3)

$l(\alpha,\lambda)=-nln\Gamma(\alpha)-n\alpha ln\lambda+(\alpha-1)\sum x_i-\sum x_i/\lambda$

$I(\lambda)=E(2\sum x_i/\lambda^3-n\alpha/\lambda^2)=2\alpha/\lambda^4-n\alpha/\lambda^2$

$\therefore \pi(\lambda)=\sqrt{2\alpha-n\alpha\lambda^2}/\lambda^2$

21)

平方损失下，Bayes估计即为后验期望

$\pi(\theta|x)=\frac{(n+1)^{\sum x_i+1}}{\Gamma(\sum x_i+1)}\theta^{\sum x_i}e^{-(n+1)\lambda}$

$\hat{\theta}_B(x)=(\sum x_i+1)/(n+1)$

24)

$\because \hat{\tau}_B=\frac{E(\tau w(\tau)|x)}{E(w(\tau)|x)}$

$w(\tau)=1/\tau^2$

$\therefore \hat{\tau}_B=\frac{E(1/\tau|x)}{E(1/\tau^2|x)}$

$\because E(1/\tau|x)=\beta/\alpha, E(1/\tau^2|x)=(\beta^2+\beta)/\alpha^2$

$\therefore \hat{\tau}_B=\alpha/(\beta+1)$