

$$1. y \sim \chi^2(df=6)$$

$$p \text{ chi sq } (0.93, df=6)$$

$$p = 11.65992$$

$$2. \frac{(n-1)s^2}{\sigma^2} \sim \chi^2(df=n-1)$$

$$\frac{(11-1)s^2}{\sigma^2} \sim \chi^2(df=11-1=10)$$

$$5s^2 \sim \chi^2(df=10)$$

$$P(s^2 \leq a) = 0.025$$

$$P(5s^2 \leq 5a) = 0.025$$

$$5a = \chi^2(df=10)$$

$$= 3.247$$

$$a = 0.6494$$

$$P(s^2 \leq b) = 0.975$$

$$P(5s^2 \leq 5b) = 0.975$$

$$5b = \chi^2(df=10)$$

$$= 20.48$$

$$b = 4.096$$