1. Let X_1, X_2, X_3 be independent identically distrubuted normal $N(0,6)$ random variables. Find c such that

$$P\{X_1^2 + X_2^2 + X_3^2 \leq c\} = .95$$

using one of the enclosed tables.

$$.95 = P\left(\left(\frac{X_1}{\sqrt{3}}\right)^2 + \left(\frac{X_2}{\sqrt{3}}\right)^2 + \left(\frac{X_3}{\sqrt{3}}\right)^2 \leq \frac{c}{6} \right)$$

$$\Rightarrow \quad \frac{c}{6} = \chi^2_{.95}(3) = 7.8$$

$$\Rightarrow \quad c = 7.8(6) = 46.8$$