1. Suppose that $X_1, ..., X_{10}$ is a random sample from the standard normal distribution. Find the value of c in each part with brief explanation.

(a) **(2 points)** $P\left(\frac{X_1}{\sqrt{\sum_{i=2}^{10} X_i^2}} \leq c\right) = 0.95$

(b) **(2 points)** $P\left(\frac{\sum_{i=1}^{4} X_i^2}{\sum_{i=5}^{10} X_i^2} \leq c\right) = 0.975$