

3.4 Playing 12 rounds of golf on his home course, a golf professional averaged 72.4 with a standard deviation of 2.6. Construct a 99 percent confidence interval for the standard deviation, which here is a measure of the golf professional's consistency.

We want a 99% confidence interval for a population standard deviation.

$$\alpha = 0.01 \qquad df = 11$$

$$\frac{\alpha}{2} = 0.005$$

Sample Data

$n = 12$   
 $\bar{x} = 72.4$   
 $s = 2.6$

$$\sqrt{\frac{(n-1)s^2}{\chi_R^2}} < \sigma < \sqrt{\frac{(n-1)s^2}{\chi_L^2}}$$

$$\sqrt{\frac{(11)(2.6)^2}{26.757}} < \sigma < \sqrt{\frac{(11)(2.6)^2}{2.603}}$$

$1.67 < \sigma < 5.34$
------------------------

STUDY: Chapter 6: Section 6.5

- Estimating a population variance or standard deviation