

*"We are what we constantly do. Excellence then is not an act, but a habit." ~Aristotle*

***Confidence Interval for a Mean***

1) In a random sample of 50 people, the mean body mass index was 27.7 and the standard deviation was 6.12. Construct a 95% confidence interval for the population mean.

***Confidence Interval for a Proportion***

2) In a survey of 2096 U.S. adults, 1740 think football teams of all levels should require players who suffer a head injury to take a set amount of time off from playing to recover. Construct a 95% confidence interval for the population proportion that believe this.

***Hypothesis Test for a Mean***

3) A sports statistician claims that the mean winning time for Boston Marathon women's open division champions is greater than 2.68 hours. The mean winning time of a sample of 30 randomly selected Boston Marathon women's open division champions is 2.70 hours with a standard deviation of 0.32 hours. At  $\alpha = 0.05$  what can be concluded?

***Hypothesis Test for a Proportion***

4) A researcher claims that 85% of Americans think they are unlikely to contract the Zika virus. In a random sample of 250 Americans, 225 think they are unlikely to contract the Zika virus. At  $\alpha = 0.05$ , is there enough evidence to support this claim?