Disc golf is a rapidly growing sport that combines elements of traditional golf and frisbee. Played on courses designed with baskets as targets, disc golf challenges players to navigate through varying terrains, including wooded areas, open fields, and hilly landscapes. The objective is to throw a disc into the basket in the fewest throws possible. With different types of discs for various distances and shot types, players strategize to overcome obstacles and optimize their throws.

The Professional Disc Golf Association (PDGA) serves as the primary governing body for the sport and organizes various tournaments throughout the year. The most prestigious series is the PDGA National Tour, which brings together elite players from around the world to compete in multiple events across different courses. Additionally, the Disc Golf Pro Tour (DGPT) has gained prominence, offering a series of high-profile tournaments and a season-long points race.

The website "StatMando" has wide variety of disc golf data. Included in this is the scoring data from 2023 Mixed Professional Open (MPO) Standard Elite Series & Majors for all players.

<One sample proportions>

1. Northwood Black's par-5 hole 12 from the Ledgestone Open is generally considered as the toughest hole for MPO in the United States. (And has been for the fourth consecutive year.) Of the 291 times it was played in 2022, players recorded a score above par (i.e., 6 or more throws) 218 times. Use this sample of data to construct a 95% confidence interval for the proportion of standard elite series and majors MPO players that score above par on this hole.
2. Using your interval from the previous question, write a statement that could be used to describe what to expect about scores above par for Northwood Black’s hole 12 in the upcoming season.
3. What assumption(s) are you making about these data with your statement from the previous question.

<Two sample proportions>

1. In both 2022 and 2023, the PDGA Championship Event, was held at the IDGC – WR Jackson Memorial Course in Appling, GA. While most of the 18 holes on the course did not change structure in the two years, Hole 18 changed from a 726 foot par-5 in 2022 to a 734 foot par-4. In 2022, players recorded a score under par in 251 of the 398 times it was played. In 2023, players recorded a score under par in 43 of the 423 times it was played. Assuming these players are a representative sample of all players on the course, use the appropriate statistical inference to make a statement about the change in difficulty of Hole 18.

<Chi-Square Goodness of Fit>

Robin’s part

<Chi-Square Test of Independence>

* Use full data from 2023 championship to look for associations between under/at/over par.
  + All 18 holes
  + Group by par rating.