04: PROBABILITY REVIEW

1 Probability Review

1.1 Big mechanics to know (1 variable)

1.2 Big mechanics to know (2 variable)

1.3 Working with moments

2 Sampling distributions

2.1 Recap from Friday

2.2 Central Limit Theorem

Suppose we have an iid sample $X_1, ..., X_n \sim F_x$. The CLT tells us that:

- Sampling distribution is centered at population mean
- As
- *It doesn't matter what shape X_i is!*

2.3 Example: Binomial data

According to the 2004 American Community Survey, 28% of adults over 25 years old in Utah have completed a bachelor's degree. In a random sample of 64 adults over age 25 from Utah, what is the probability that at least 30 have a bachelor's degree?