

# **04: PROBABILITY REVIEW**

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## **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  $X_1, \dots, X_n \sim F_x$ . 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?