

Outline of CLT steps

1. Write event you are interested in, in terms of sum of random variables.
2. Apply continuity correction if RVs are discrete.
3. Standardize RV to have mean 0 and standard deviation 1.
4. Replace RV with $\mathcal{N}(0,1)$.
5. Write event in terms of Φ
6. Look up in table.

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Confidence Intervals

A "confidence interval" tells you the probability (how confident you should be) that your random variable fell in a certain range (interval)

Usually "close to its expected value"

$$\mathbb{P}(|X - \mu| > \varepsilon) \leq \delta$$

If your RV has expectation equal to the value you're searching for (like our polling example) you get a probability of being "close enough" to the target value.

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