

# Module 7a – Confidence Intervals (for means)

[Review Against All Odds: Unit 24](#) (Confidence Intervals)

# Confidence Intervals (for means)

- Still dealing with quantitative/continuous variables
- Questions: How well do our sample results reflect the population? How accurate are we?
- In addition to the average, a confidence interval includes a “confidence level” and a “margin of error”

# Confidence Levels

- We can choose the level of confidence we want to reflect:
  - Typical confidence levels: 90%, 95%, and 99%

$$\bar{x} \pm z \frac{s}{\sqrt{n}}$$

Confidence level	Z value
90%	1.65
95%	1.96 ← We can round this to 2.0
99%	2.58

# Confidence Interval Formulas

***90% Confidence Interval Formula***

$$\bar{X} \pm 1.645 * \frac{s}{\sqrt{n}}$$

Confidence  
Level

***95% Confidence Interval Formula***

$$\bar{X} \pm 1.96 * \frac{s}{\sqrt{n}}$$

Sample  
Mean

Standard  
Error

Margin  
of Error

***99% Confidence Interval Formula***

$$\bar{X} \pm 2.576 * \frac{s}{\sqrt{n}}$$