

Name: _____

Student ID: _____

ECON 0150 | MiniExam 05 | Spring 2025

This MiniExam will take 8 minutes with a quick break to follow. MiniExams are designed to both test your knowledge and challenge you to apply familiar concepts in new environments. Treat it as if you're trying to show me that you understand the material. Answer clearly, completely, and concisely.

Academic Conduct Code

The following academic conduct code is designed to protect the integrity of your work. Print your name/initials beside the three academic honesty agreements. I pledge to my fellow students, the university, and the instructor, that:

____ I will complete this MiniExam solely using my own work.

____ I will not use any digital resources unless explicitly allowed by the instructor.

____ I will not communicate directly or indirectly with others during the MiniExam.

Q1. A restaurant's customer wait times follow a normal distribution with mean (μ) = 12 minutes and standard deviation (σ) = 2 minutes.

a) What is the standard error of the sampling distribution if you take a sample of 64 customers?

- ☐ 2 minutes
- ☐ 1 minute
- ☐ 0.5 minutes
- ☐ 0.25 minutes

b) If you increase your sample size, what happens to the standard error?

- ☐ The standard error increases
- ☐ The standard error decreases
- ☐ The standard error stays the same
- ☐ Cannot determine without more information

Q2. For a sample of 30 customers at a restaurant:

a) The sample mean (\bar{x}) wait time is 14 minutes and the sample standard deviation (S) is 3 minutes. Which of these is a sample statistic?

- ☐ The population mean (μ)
- ☐ The population standard deviation (σ)
- ☐ The sample mean (\bar{x})
- ☐ The standard error of the mean

b) According to the Central Limit Theorem, which statement is correct?

- ☐ The sample mean will equal the population mean when n is large enough
- ☐ The individual data points in a sample will follow a normal distribution
- ☐ The distribution of sample means will approach a normal distribution
- ☐ The population distribution must be normal for the theorem to apply

Q3. You roll a fair six-sided die 50 times and calculate the average. You repeat this process many times and create a histogram of all these sample averages.

Which of these statements is true about the histogram?

- ☐ It will look like a uniform distribution
- ☐ It will be centered at 3.5
- ☐ It will have the same spread as the original die roll distribution
- ☐ None of the above