CONCORDIA COLLEGE
MOORHEAD, MINNESOTA

Name: _____

Date: _____

Section: ○ Mon/Wed ○ Tue/Thu

1. **(6 Points)**

Customer waiting times at an airport service desk have a right-skewed population distribution with a mean of 12 minutes and a standard deviation of 6 minutes. A random sample of 36 independent customer waiting times is selected. Let $\bar{x}$ denote the sample mean.

A. What is the expected value of $\bar{x}$?

- Answer: _____

B. Calculate the standard error of $\bar{x}$. Show your calculation.

- Answer: _____

_____

C. What is the approximate shape of the sampling distribution of $\bar{x}$? Explain using the central limit theorem.

- Answer: _____

_____

2. **(4 Points)**

An airport wants to estimate satisfaction among all passengers, but it surveys only passengers using its premium lounge.

A. Identify one source of nonsampling error in this survey. Explain.

- Answer: _____

_____

B. Would surveying many more premium-lounge passengers necessarily correct this problem? Explain.

- Answer: _____

_____

Score: _____ / 10