

Name: _____

Date: 4/7/2025

Math 130

Quiz 12

Some formulas you may need:

$$E = t_{\alpha/2} \frac{s}{\sqrt{n}} \quad df = n - 1 \quad s = \sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}} = \sqrt{\frac{\sum x^2 - \frac{(\sum x)^2}{n}}{n - 1}}$$

1. (1, 1, 1, 1, 4, 2 points) A new employee has just been hired at the McDonald's in Montebello. In order to evaluate his efficiency, the manager wants to know the average amount of time it takes the new employee to fill orders from customers during his second day of work. Because the manager doesn't want to waste his whole day collecting data, instead of keeping track of every order the employee filled, data was only collected for his first 12 orders. The data is given in the table below.

Order Fill Times (in seconds)					
103	174	136	75	91	119
144	121	205	76	174	111

a) What is the population? What is the sample?

b) What is the population parameter (give the symbol and the description)?

c) What is the sample statistic (give the symbol, description and value)?

d) What is the best point estimate for the average amount of time it takes the new employee to fill orders from customers during his second day of work?

e) Construct a 99% confidence interval for the average amount of time it takes the new employee to fill orders from customers during his second day of work

f) What does the 99% mean in a 99% confidence interval?