

Ryerson University  
F16 QMS 202  
Practice Questions for Lecture 1  
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1. The Z-values associated with 99% confidence (i.e., probability 0.99) are
  - a) -1.96 and 1.96
  - b) -2.55 and 2.55
  - c) -2.57 and 2.57
  - ☒ d) -2.58 and 2.58
2. If  $\bar{X} = 125$ ,  $\sigma = 24$ , and  $n = 36$ , the 99% confidence interval estimate for the population mean  $\mu$  is
  - a)  $102.45 \leq \mu \leq 127.88$
  - b)  $92.55 \leq \mu \leq 107.86$
  - ☒ c)  $114.70 \leq \mu \leq 135.30$
  - d)  $100.45 \leq \mu \leq 117.88$
3. Determine the critical value of  $t$  in the following circumstances:

$$1 - \alpha = 0.90, n = 16.$$

Round your answer to 4 decimal places!

**Answer:** 1.7531

4. It is desired to estimate the mean total compensation of CEOs in the Service industry. Data were randomly collected from 18 CEOs and the 95% confidence interval was calculated to be (\$2, 181, 260, \$5, 836, 180). Which of the following interpretations is correct?
  - a) 95% of the sampled total compensation values fell between \$2, 181, 260 and \$5, 836, 180.
  - b) We are 95% confident that the mean of the sampled CEOs falls in the interval \$2, 181, 260 to \$5, 836, 180.

- c) In the population of Service industry CEOs, 95% of them will have total compensations that fall in the interval \$2,181,260 to \$5,836,180.
  - d) We are 95% confident that the mean total compensation of all CEOs in the Service industry falls in the interval \$2,181,260 to \$5,836,180.
5. An economist is interested in studying the incomes of consumers in a particular country. The population standard deviation is known to be \$1000. A random sample of 50 individuals resulted in a mean income of \$15000. What is the width of the 90% confidence interval rounded to two decimal places? Remark: The width (length) of an interval  $(a, b)$  is  $b - a$ .

**Answer:** 465.23

6. The head librarian at the Library of Congress has asked her assistant for an interval estimate of the mean number of books checked out each day. The assistant provides the following interval estimate: from 740 to 920 books per day. If the head librarian knows that the population standard deviation is 150 books checked out per day, and she asked her assistant to use 25 days of data to construct the interval estimate, what confidence level can she attach to the interval estimate?
- a) 99.7 %
  - b) 99.0 %
  - c) 98.0 %
  - d) 95.4 %

**-The end-**