92283 (Section 210, 209) Review II-A 10/22/15

Class\_\_\_\_\_\_\_\_ Class ID\_\_\_\_\_\_\_\_ Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Critical Value *z*\*** The critical value *z*\*, used for constructing a 96% confidence interval for a population mean ** is
2. 1.645 b) 2.054 c) 2.326 d) 2.576
3. **Margin of Error**  A researcher used a new drug to treat 100 subjects with high cholesterol. For the patients in the study, after two months of treatment the average decrease in cholesterol level was 80 milligrams per deciliter (mg/dl). Assume that the decrease in cholesterol after two months of taking the drug follows a Normal distribution, with unknown mean ** and standard deviation ** = 20 mg/dl. The researcher will construct a 90% confidence interval to estimate **. The margin of error for the researcher's 90% confidence interval for ** is
4. 1.645 mg/dl.
5. 2 mg/dl.
6. 20 mg/dl.
7. 3.29 mg/dl.
8. **Margin of Error** You plan to construct a confidence interval for the mean ** of a Normal population with (known) standard deviation **. Which of the following will reduce the size of the **margin of error?**
9. use a lower confidence level.
10. increase the sample size.
11. reduce **.
12. all of the above
13. **Sample Size n Estimation** to assess the accuracy of a laboratory scale, a standard weight (with known value) is repeatedly weighed a total of *n* times, and the mean  of the sample weights is computed. Suppose the scale readings are normally distributed, with unknown mean ** and standard deviation ** = 0.01 g. How large should *n* be so that a 95% confidence interval for ** has a margin of error of ± 0.001?
14. 10 b) 20 c) 100 d) 385
15. **Hypothesis Claim** The mean area ** of the several thousand apartments in a new development by a certain builder is advertised to be 1250 square feet. A tenant group thinks this is inaccurate and suspects that the average is actually less than 1250 square feet. Apartments are randomly selected and carefully measured. The appropriate null and alternative hypotheses relevant to this example are
16. *H*0: ** = 1250 and *H*a: **  1250.
17. *H*0: ** = 1250 and *H*a: ** >> 1250.
18. *H*0: ** = 1250 and *H*a: **< 1250.

1. **P-value** Suppose in a test of hypotheses, data are deemed to be significant at level ** = .08, but not significant at level ** = .04. Which of the following is true about the *P*-value, *P*, associated with this test?
2. *P* > 0.08 b) *P < 0.04 c) 0*.04 < *P* < 0.08
3. **Condition to Reject Null Hypothesis H0** In a statistical hypotheses test, we say the data are statistically significant at level ** and reject the null hypothesis *H*0 whenever
4. ** = 0.05. b) ** is small c) *P*-value > **. d) *P*-value < **.
5. The probability density of a random variable X is given in the following figure.

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| --- | --- | --- | --- |
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|  |  |  |  |

0 1 2

X

From this density, the probability that X is between 0.5 and 1.5 is

a. 1/3.

b. 1/2.

c. 3/4.

d. 1.