

BA4326/5326 Quiz 2

Your Name:

Section:

Quiz 2 due in class

1. One-tail or two tail test? Circle the right one:

- | | | |
|---|--------|--------|
| A. Does a redesigned inkjet cartridge last longer? | 1 tail | 2-tail |
| B. Chinese smokers. Are they smoking more or less than in 1992? | 1 tail | 2-tail |
| C. Average price of VCRs has decreased from \$215 in 1992 | 1 tail | 2-tail |
| D. Females and males differ in height | 1 tail | 2-tail |
| E. Males are taller than females | 1 tail | 2-tail |

Think

2. Suppose a 95% confidence interval for an estimate of a population mean turns out to be (1,000- 2,100). What does it mean to be "95% confident" in an inference that the true mean is in this interval?

- A. In repeated sampling, the population parameter would be between 1000 and 2100 95% of the time.
- B. 95% of the observations in the entire population fall in this interval.
- C. 95% of the observations in a sample will always fall in this interval
- D. 95% of subsequent sample means would fall in this interval.
- E. With enough repeated sampling, 95% of the intervals constructed like this would include the population mean, so I'm 95% confident that this one does.

3. In testing (at $\alpha=0.05$) whether hospital length of stay (LOS) was reduced from an average of 5.0 days, with H_0 that it was still = 5.0, a sample of 100 patients gave a mean of 4.53 with a standard deviation of 3.68. The P value turned out to be 0.1

What should we conclude?

- A. The probability of rejecting the null hypothesis is 10%
- B. Since the P value greatly exceeds $\alpha=0.05$, the null hypothesis should be rejected.
- C. Since the P value exceeds .05, there is insufficient evidence to reject the null hypothesis at 95% confidence.
- D. We are 90% confident that the true mean is 5.0
- E. There is a high probability that some patients had negative lengths of stay.

hospital length of stay <5.0 days??	
Column1	
Mean	4.53
Standard Error	0.36775458
Median	4
Mode	3
Standard Deviation	3.87754584
Sample Variance	13.5243434
Kurtosis	5.27881299
Skewness	2.18182842
Range	21
Minimum	1
Maximum	22
Sum	453
Count	100
Confidence Level(95.0%)	0.72970501
Pvalue (Z=-1.278)	0.10062478
UL	5.25970501
LL	3.80029499

4. The hospital administrators in the previous example feel as if their careers are threatened if they can't conclude that the average LOS has decreased below 5. From the data above, can we conclude that the average has NOT dropped below 5.0 days? In other words, would you ACCEPT the hypothesis that it is still 5.0? Why or why not?

5. What can the administrators do with the test to make it more likely the null hypothesis will be rejected when it is really false?

Circle all that apply:

- A. increase the sample size
- B. increase the alpha level
- C. increase the beta level
- D. increase the confidence level
- E. decrease the sample size
- F. compare samples of like cases (e.g. appendectomies to appendectomies) to control for other variables
- G. Get more careful people to enter data