

Elementary Statistics

Name: _____

Study Guide 21

Class: _____

Due Date: _____

Score: _____

Your solutions must be consistent with class notes & resources.

Be Neat, Organized, and No Work \Leftrightarrow No Points

1. (2 points) What is the confidence interval?

1. _____

2. (2 points) What is the point-estimate?

2. _____

3. Use mathematical notation to give the point-estimate for

(a) (1 point) population proportion p .

(a) _____

(b) (1 point) population mean μ .

(b) _____

4. (2 points) What does the confidence level indicate?

4. _____

5. (2 points) What is the significance level?

5. _____

6. (1 point) What confidence level do we use if none is provided?

6. _____

7. (2 points) Whenever constructing the confidence interval for population proportion, what TI commands do you use to find the C.V. and Confidence Interval?

Be Very Specific	Critical Value	Confidence Interval
TI Command		

8. Find the following critical values.

Drawing, Shading, labeling & Full TI Command Required.

- (a) (2 points) $z_{0.015}$.

(a) _____

- (b) (2 points) $z_{\alpha/2}$ for $\alpha = 0.03$ significance level.

(b) _____

- (c) (2 points) $z_{\alpha/2}$ for 97% confidence level.

(c) _____

9. Consider the confidence interval $0.568 < p < 0.724$,

- (a) (2 points) Find the sample proportion \hat{p} .

(a) _____

- (b) (2 points) Find the margin error for this confidence interval.

(b) _____

10. Consider the confidence interval $0.17 < p < 0.33$,

(a) (2 points) Find the sample proportion \hat{p} .

(a) _____

(b) (2 points) Find the margin error for this confidence interval.

(b) _____

11. Given $n = 320$ and $x = 208$,

(a) (2 points) find 99% confidence interval to estimate population proportion.

(a) _____

(b) (2 points) find the margin of error.

(b) _____

12. (3 points) Given $n = 500$ and $\hat{p} = 0.38$, find confidence interval to estimate population proportion.

12. _____

13. In a survey of 125 drivers, 70 of them admitted that they have texted while driving,

(a) (2 points) Find the 94% confidence interval for the proportion of all drivers that have texted while driving.

(a) _____

(b) (2 points) Find the margin of error for this confidence interval.

(b) _____

14. (2 points) What formula do we use to determine the minimum sample size needed to construct confidence interval for population proportion?

When	\hat{p} & \hat{q} known	\hat{p} & \hat{q} Unknown
$n =$		

15. Find the minimum sample size needed when estimating population proportion with 98% confidence level, margin of error to be within 4% and
- (a) (3 points) $\hat{p} = .75$.

(a) _____

- (b) (2 points) \hat{p} is unknown.

(b) _____

16. In a survey of 328 adults, 15% of them admitted that they have driven while intoxicated,
- (a) (2 points) Find the 90% confidence interval for the proportion of all adults drivers that they have driven while intoxicated.

(a) _____

- (b) (3 points) Find the minimum sample size needed if we wish to be 99% confident and error to be within 5% of the true proportion of all adults drivers that they have driven while intoxicated.

(b) _____

Do not hesitate to ask for help.