

## Practice 09

## 7.3 Confidence Intervals for Proportions

- 1) Find the point estimate for the given values of  $x$  and  $n$ . 1) \_\_\_\_\_  
 $x = 92, n = 138$   
 A) 0.333                      B) 92                      C) 0.667                      D) 0.040

- 2) The following display from a TI-84 Plus calculator presents a 99% confidence interval 2) \_\_\_\_\_  
 for a proportion.

**1-PropZInt**

(0.422847, 0.754155)

$\hat{p} = 0.588501$

$n = 39$

Fill in the blanks: We are \_\_\_\_\_ confident that the population mean is between \_\_\_\_\_ and \_\_\_\_\_.

- A) 99%, 0.422847, 0.754155                      B) 99%, 0, 0.588501  
 C) 1%, 0, 0.588501                      D) 1%, 0.422847, 0.754155
- 3) Use the given data to construct a confidence interval of the requested level. 3) \_\_\_\_\_  
 $x = 80, n = 198$ , confidence level 99%  
 A)  $0.314 < p < 0.494$                       B)  $0.369 < p < 0.439$   
 C)  $0.323 < p < 0.485$                       D)  $0.173 < p < 0.635$
- 4) In a survey of 298 registered voters, 150 of them wished to see Mayor Waffleskate lose 4) \_\_\_\_\_  
 her next election. Construct a 90% confidence interval for the proportion of registered  
 voter who want to see Mayor Waffleskate defeated.  
 A)  $0.456 < p < 0.551$                       B)  $0.425 < p < 0.582$   
 C)  $0.474 < p < 0.532$                       D)  $0.466 < p < 0.541$
- 5) A recent study of 750 internet users in Europe found that 35% of internet users were 5) \_\_\_\_\_  
 women. What is the 95% confidence interval of the true proportion of women in  
 Europe who use the internet?  
 A)  $0.309 < p < 0.391$                       B)  $0.321 < p < 0.379$   
 C)  $0.316 < p < 0.384$                       D)  $0.349 < p < 0.351$

- 6) A sample of 400 racing cars showed that 80 of them cost over \$700,000. What is the 99% confidence interval for the true proportion of racing cars that cost over \$700,000? 6) \_\_\_\_\_  
 A)  $0.148 < p < 0.252$  B)  $0.748 < p < 0.852$   
 C)  $0.190 < p < 0.210$  D)  $0.161 < p < 0.239$
- 7) A survey of 800 women shoppers found that 17% of them shop on impulse. What is the 98% confidence interval for the true proportion of women shoppers who shop on impulse? 7) \_\_\_\_\_  
 A)  $0.144 < p < 0.196$  B)  $0.139 < p < 0.201$   
 C)  $0.167 < p < 0.173$  D)  $0.136 < p < 0.204$
- 8) A random sample of 100 voters found that 46% were going to vote for a certain candidate. Find the 90% confidence interval for the population proportion of voters who will vote for that candidate. 8) \_\_\_\_\_  
 A)  $38.7\% < p < 53.3\%$  B)  $41.9\% < p < 50.1\%$   
 C)  $39.6\% < p < 52.4\%$  D)  $37.8\% < p < 54.2\%$
- 9) The Pizza Shop wanted to determine what proportion of its customers ordered only cheese pizza. Out of 80 customers surveyed, 15 ordered only cheese pizza. What is the 99% confidence interval of the true proportion of customers who order only cheese pizza? 9) \_\_\_\_\_  
 A)  $0.115 < p < 0.260$  B)  $0.102 < p < 0.273$   
 C)  $0.075 < p < 0.300$  D)  $0.086 < p < 0.289$
- 10) Find the margin of error for the given confidence level and values of  $x$  and  $n$ . 10) \_\_\_\_\_  
 $x = 105, n = 217, \text{ confidence level } 95\%$   
 A) 0.484 B) 0.066 C) 0.034 D) 0.516
- 11) A recent poll of 700 people who work indoors found that 278 smoke. If the researchers want to be 98% confident of their results to within 3.5 percentage points, how large a sample is necessary? 11) \_\_\_\_\_  
 A) 751 B) 33 C) 532 D) 1064
- 12) The Academy of Orthopedic Surgeons states that 80% of women wear shoes that are too small for their feet. A researcher wants to be 98% confident that this proportion is within 3 percentage points of the true proportion. How large a sample is necessary? 12) \_\_\_\_\_  
 A) 966 B) 484 C) 683 D) 1183

Answer Key

Testname: STA2023\_PRACTICE09

- 1) C
- 2) A
- 3) A
- 4) A
- 5) C
- 6) A
- 7) B
- 8) D
- 9) C
- 10) B
- 11) D
- 12) A