

- 1) When 345 college students are randomly selected and surveyed, it is found that 110 own a car. Find a 99% confidence interval for the true proportion of all college students who own a car.
- 2) A study of the amount of time it takes a mechanic to rebuild the transmission for a 1992 Chevrolet Cavalier shows that the mean is 8.4 hours and the standard deviation is 1.8 hours. If 40 mechanics are randomly selected, find the probability that their mean rebuild time exceeds 8.7 hours.
- 3) What is the minimum sample size you should use to assure that you estimate p with the following given conditions: Margin of error: 0.04; confidence level: 90%; from a prior study, \hat{p} is estimated by 0.27.
- 4) A random sample of 118 light bulbs had a mean life of $\bar{x} = 449$ hours with a standard deviation of $s = 33$ hours. Construct a 90 percent confidence interval for the mean life, μ , of all light bulbs of this type.
- 5) What is the minimum sample size required to estimate the population mean with the following given conditions:
Margin of error: \$133, confidence level: 99%, $s = \$533$
- 6) Merta reports that 74% of its trains are on time. A check of 60 randomly selected trains shows that 38 of them arrived on time. Find the probability that among the 60 trains, 38 or fewer arrive on time. Based on the result, does it seem plausible that the "on-time" rate of 74% could be correct?
- 7) The data below consists of the pulse rates (in beats per minute) of 32 students. Construct a 96% confidence interval for the population mean.

80	74	61	93	69	74	80	64
51	60	66	87	72	77	84	96
60	67	71	79	89	75	66	70
57	76	71	92	73	72	68	74

- 8) What is the minimum sample size you should use to assure that you estimate p with the following given conditions:
Margin of error: 0.04; confidence level: 94%; \hat{p} and \hat{q} unknown

Answer Key

Testname: CHAPTERS 7-8-F08

1) $0.254 < p < 0.383$

2) 0.1469

3) 334

4) $444 < \mu < 454$

5) 107

6) .0409 , no

7) $69.5 < \mu < 77.2$

8) 553