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| Question 1 of 20 | 1.0 Points |

Results from previous studies showed 79% of all high school seniors from a certain city plan to attend college after graduation. A random sample of 200 high school seniors from this city reveals that 162 plan to attend college. Does this indicate that the percentage has increased from that of previous studies? Test at the 5% level of significance.

Compute the z or t value of the sample test statistic.

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| --- | --- |
| A.t = 1.645 |  |
| B.z = 1.96 |  |
| C.z = 0.69 |  |
| D.z = 0.62 |  |

Question 2 of 20

In an article appearing in *Today’s Health* a writer states that the average number of calories in a serving of popcorn is 75. To determine if the average number of calories in a serving of popcorn is different from 75, a nutritionist selected a random sample of 20 servings of popcorn and computed the sample mean number of calories per serving to be 78 with a sample standard deviation of 7.

State the null and alternative hypotheses.

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| --- | --- |
| A.H0:  = 75, H1:  ≠ 75 |  |
| B.H0:   75, H1:  < 75 |  |
| C.H0:  = 75, H1:  > 75 |  |
| D.H0:   75, H1:  > 75 |  |

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| Question 3 of 20 | 1.0 Points |

A null hypothesis can only be rejected at the 5% significance level if and only if:

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| A.a 95% confidence interval does not include the hypothesized value of the parameter |  |
| B.a 95% confidence interval includes the hypothesized value of the parameter |  |
| C.the null hypotheses includes sampling error |  |
| D.the null hypothesis is biased |  |

Question 4 of 20

If a teacher is trying to prove that a new method of teaching economics is more effective than a traditional one, he/she will conduct a:

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| A.confidence interval |  |
| B.two-tailed test |  |
| C.one-tailed test |  |
| D.point estimate of the population parameter |  |

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| Question 5 of 20 | 1.0 Points |

Smaller p-values indicate more evidence in support of the:

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| A.alternative hypothesis |  |
| B.quality of the researcher |  |
| C.null hypothesis |  |
| D.the reduction of variance |  |

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| Question 6 of 20 | 1.0 Points |

A manufacturer of flashlight batteries took a sample of 13 batteries from a day’s production and used them continuously until they failed to work. The life lengths of the batteries, in hours, until they failed were: 342, 426, 317, 545, 264, 451, 1049, 631, 512, 266, 492, 562, and 298.

At the .05 level of significance, is there evidence to suggest that the mean life length of the batteries produced by this manufacturer is more than 400 hours?

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| A.No, because the test value 1.257 is greater than the critical value 1.115 |  |
| B.No, because the p-value for this test is equal to .1164 |  |
| C.Yes, because the test value 1.257 is less than the critical value 2.179 |  |
| D.Yes, because the test value 1.257 is less than the critical value 1.782 |  |

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| Question 7 of 20 | 1.0 Points |

The “Pizza Hot” manager commits a Type I error if he/she is

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| A.switching to new style when it is no better than old style |  |
| B.switching to new style when it is better than old style |  |
| C.staying with old style when new style is better |  |
| D.staying with old style when new style is no better than old style |  |

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| Question 8 of 20 | 1.0 Points |

You conduct a hypothesis test and you observe values for the sample mean and sample standard deviation when n = 25 that do not lead to the rejection of H0. You calculate a p-value of 0.0667. What will happen to the p-value if you observe the same sample mean and standard deviation for a sample size larger than 25?

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| --- | --- |
| A.The p – value increases |  |
| B.The p – value may increase or decrease |  |
| C.The p – value stays the same |  |
| D.The p – value decreases |  |

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| Question 9 of 20 | 1.0 Points |

Suppose that the mean time for a certain car to go from 0 to 60 miles per hour was 7.7 seconds. Suppose that you want to test the claim that the average time to accelerate from 0 to 60 miles per hour is longer than 7.7 seconds. What would you use for the alternative hypothesis?

|  |  |
| --- | --- |
| A.H1: 7.7 seconds |  |
| B.H1:  = 7.7 seconds |  |
| C.H1:  > 7.7 seconds |  |
| D.H1: < 7.7 seconds |  |

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| Question 10 of 20 | 1.0 Points |

Results from previous studies showed 79% of all high school seniors from a certain city plan to attend college after graduation. A random sample of 200 high school seniors from this city reveals that 162 plan to attend college. Does this indicate that the percentage has increased from that of previous studies? Test at the 5% level of significance. State the null and alternative hypotheses.

|  |  |
| --- | --- |
| A.H0: m = .79, H1: m > .79 |  |
| B.H0:    = .79, H1:  > .79 |  |
| C.H0: p = .79, H1: p ≠ .79 |  |
| D.H0: p ≤ .79, H1: p > .79 |  |

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