* **Question 1**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Read the *t* statistic from the *t* distribution table and circle the correct answer. For a one-tailed test (lower tail) with 22 degrees of freedom at *α* = .05, the value of *t* = |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  -1.717. | | Answers: | a.  -1.717. | |  | b.  1.383. | |  | c.  -1.721. | |  | d.  -1.383. | |  |  |  |

* **Question 2**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | When the following hypotheses are being tested at a level of significance of *α*  ​  *H*0: *μ*  500  *H*a: *μ* < 500  ​  the null hypothesis will be rejected, if the *p*-value is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  *α*. | | Answers: | a.  > *α*. | |  | b.   1 - *α*/2. | |  | c.  *α*. | |  | d.  = *α*/2. | |  |  |  |

* **Question 3**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | More evidence against *H*0 is indicated by​ |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  ​smaller *p*-values. | | Answers: | a.  ​smaller critical values. | |  | b.  ​lower levels of significance. | |  | c.  lower probabilities for the power of the test. | |  | d.  ​smaller *p*-values. | |  |  |  |

* **Question 4**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The probability of committing a Type I error when the null hypothesis is true as an equality is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  the level of significance. | | Answers: | a.  greater than 1. | |  | b.  *β*. | |  | c.  the confidence level. | |  | d.  the level of significance. | |  |  |  |

* **Question 5**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Read the *z* statistic from the normal distribution table and circle the correct answer. For a one-tailed test (lower tail) using *α* = .0630, *z* = |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  -1.53. | | Answers: | a.  -1.96. | |  | b.  -1.53. | |  | c.  -1.86. | |  | d.  -1.645. | |  |  |  |

* **Question 6**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Read the *z* statistic from the normal distribution table and circle the correct answer. For a two-tailed test using *α* = .1388, *z* = |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  1.48. | | Answers: | a.  1.48. | |  | b.  1.96. | |  | c.  1.09. | |  | d.  .86. | |  |  |  |

* **Question 7**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | In the hypothesis testing procedure, *α* is the |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  level of significance. | | Answers: | a.  confidence level. | |  | b.  critical value. | |  | c.  level of significance. | |  | d.  *p*-value. | |  |  |  |

* **Question 8**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | I n hypothesis tests about a population proportion, *p*0 represents the​ |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  ​hypothesized population proportion. | | Answers: | a.  ​observed sample proportion. | |  | b.  ​hypothesized population proportion. | |  | c.  ​observed *p*-value. | |  | d.  ​probability that *H*0 is correct. | |  |  |  |

* **Question 9**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | ​When the null hypothesis is not rejected, it is​ |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  possible a Type II error has occurred. | | Answers: | a.  not possible a Type II error has occurred. | |  | b.  possible a Type I error has occurred. | |  | c.  ​possible either a Type I or a Type II error has occurred. | |  | d.  possible a Type II error has occurred. | |  |  |  |

* **Question 10**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The average manufacturing work week in metropolitan Chattanooga was 40.1 hours last year. It is believed that the recession has led to a reduction in the average work week. To test the validity of this belief, the hypotheses are |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  *H*0: *μ* ≥ 40.1     *H*a: *μ* < 40.1. | | Answers: | a.  *H*0: *μ* > 40.1     *H*a: *μ* ≤ 40.1. | |  | b.  *H*0: *μ* ≥ 40.1     *H*a: *μ* < 40.1. | |  | c.  *H*0: *μ* < 40.1     *H*a: *μ* ≥ 40.1. | |  | d.  *H*0: *μ* = 40.1     *H*a: *μ* ≠ 40.1. | |  |  |  |

* **Question 11**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The error of rejecting a true null hypothesis is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  a Type I error. | | Answers: | a.  a Type I error. | |  | b.  never committed in hypothesis testing. | |  | c.  a Type II error. | |  | d.  always negligible in hypothesis testing. | |  |  |  |

* **Question 12**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | ​When the null hypothesis is rejected, it is​ |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  possible a Type I error has occurred. | | Answers: | a.  ​possible either a Type I or a Type II error has occurred. | |  | b.  ​not possible a Type I error has occurred. | |  | c.  possible a Type II error has occurred. | |  | d.  possible a Type I error has occurred. | |  |  |  |

* **Question 13**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Read the *t* statistic from the *t* distribution table and circle the correct answer. For a two-tailed test with a sample size of 20 and using *α* = .20, *t* = |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  1.328. | | Answers: | a.  2.528. | |  | b.  1.328. | |  | c.  2.539. | |  | d.  1.325. | |  |  |  |

* **Question 14**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | If the cost of making a Type I error is high, a smaller value should be chosen for the​ |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  ​level of significance. | | Answers: | a.  ​test statistic. | |  | b.  ​level of significance. | |  | c.  ​critical value. | |  | d.  ​confidence coefficient. | |  |  |  |

* **Question 15**

0 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | If the null hypothesis is not rejected at the 5% level of significance, it |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  may be rejected or not rejected at the 1% level. | | Answers: | a.  will also not be rejected at the 1% level. | |  | b.  will always be rejected at the 1% level. | |  | c.  will sometimes be rejected at the 1% level. | |  | d.  may be rejected or not rejected at the 1% level. | |  |  |  |

* **Question 16**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Read the *z* statistic from the normal distribution table and circle the correct answer. For a one-tailed test (upper tail) at *α* = .0630, *z* = |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  1.53. | | Answers: | a.  1.645. | |  | b.  1.53. | |  | c.  1.50. | |  | d.  1.96. | |  |  |  |

* **Question 17**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | When the area corresponding to the critical value is in the lower tail of the sampling distribution, the *p*-value is the area under the curve​ |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  ​less than or equal to the test statistic. | | Answers: | a.  ​less than or equal to the test statistic. | |  | b.  ​greater than or equal to the test statistic. | |  | c.  ​less than or equal to the critical value. | |  | d.  ​greater than or equal to the critical value. | |  |  |  |

* **Question 18**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | A Type II error is committed when |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  a true alternative hypothesis is mistakenly rejected. | | Answers: | a.  a true alternative hypothesis is mistakenly rejected. | |  | b.  the true alternative hypothesis is correctly rejected. | |  | c.  the true null hypothesis is correctly rejected. | |  | d.  a true null hypothesis is mistakenly rejected. | |  |  |  |

* **Question 19**

0 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Your investment executive claims that the average yearly rate of return on the stocks she recommends is at least 10.0%. You plan on taking a sample to test her claim. The correct set of hypotheses is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  *H*0: *μ*  10.0%     *H*a: *μ* > 10.0%. | | Answers: | a.  *H*0: *μ*  10.0%     *H*a: *μ* > 10.0%. | |  | b.  *H*0: *μ* < 10.0%     *H*a: *μ*  10.0%. | |  | c.  *H*0: *μ* > 10.0%     *H*a: *μ*  10.0%. | |  | d.  *H*0: *μ*  10.0%     *H*a: *μ* < 10.0%. | |  |  |  |

* **Question 20**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The *p*-value |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  must be a number between zero and one. | | Answers: | a.  can be any negative value. | |  | b.  must be a number between -1 and 0. | |  | c.  can be any positive value. | |  | d.  must be a number between zero and one. | |  |  |  |

* **Question 21**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | A random sample of 100 people was taken. Eighty-five of the people in the sample favored Candidate A. We are interested in determining whether or not the proportion of the population in favor of Candidate A is significantly more than 80%. The *p*-value is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  .1056. | | Answers: | a.  .1056. | |  | b.  .025. | |  | c.  .2112. | |  | d.  .05. | |  |  |  |

* **Question 22**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The academic planner of a university thinks that at least 35% of the entire student body attends summer school. The correct set of hypotheses to test his belief is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  *H*0: *p*  .35     *H*a: *p* < .35. | | Answers: | a.  *H*0: *p*  .35     *H*a: *p* > .35. | |  | b.  *H*0: *p* < .35     *H*a: *p*  .35. | |  | c.  *H*0: *p*  .35     *H*a: *p* < .35. | |  | d.  *H*0: *p* > .35     *H*a: *p*  .35. | |  |  |  |

* **Question 23**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The average hourly wage of computer programmers with 2 years of experience has been $21.80. Because of high demand for computer programmers, it is believed there has been a significant increase in the average hourly wage of computer programmers. To test whether or not there has been an increase, the correct hypotheses to be tested are |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  *H*0: *μ* ≤ 21.80     *H*a: *μ* > 21.80. | | Answers: | a.  *H*0: *μ* > 21.80     *H*a: *μ* ≤ 21.80. | |  | b.  *H*0: *μ* < 21.80     *H*a: *μ* ≥ 21.80. | |  | c.  *H*0: *μ* ≤ 21.80     *H*a: *μ* > 21.80. | |  | d.  *H*0: *μ* = 21.80     *H*a: *μ* ≠ 21.80. | |  |  |  |

* **Question 24**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | A sample of 1400 items had 280 defective items. For the following hypothesis test,  ​  *H*0: *p* ≤ .20 *H*a: *p* > .20  ​  the test statistic is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  zero. | | Answers: | a.  zero. | |  | b.  .28. | |  | c.  .14. | |  | d.  .20. | |  |  |  |

* **Question 25**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | ​For a sample size of 30, changing from using the standard normal distribution to using the *t* distribution in a hypothesis test, |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  ​will result in the area corresponding to the critical value being smaller. | | Answers: | a.  ​will result in the area corresponding to the critical value being smaller. | |  | b.  ​will have no effect on the area corresponding to the critical value. | |  | c.  ​Not enough information is given to answer this question. | |  | d.  ​will result in the area corresponding to the critical value being larger. | |  |  |  |

* **Question 26**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | In the past, 75% of the tourists who visited Chattanooga went to see Rock City. The management of Rock City recently undertook an extensive promotional campaign. They are interested in determining whether the promotional campaign actually increased the proportion of tourists visiting Rock City. The correct set of hypotheses is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  *H*0: *p*  .75     *H*a: *p* > .75. | | Answers: | a.  *H*0: *p* > .75     *H*a: *p*  .75. | |  | b.  *H*0: *p*  .75     *H*a: *p* > .75. | |  | c.  *H*0: *p* < .75     *H*a: *p*  .75. | |  | d.  *H*0: *p*  .75     *H*a: *p* < .75. | |  |  |  |

* **Question 27**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | For a two-tailed hypothesis test with a sample size of 20 and a .05 level of significance, the critical values of the test statistic *t* are  ​ |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  ​-2.093 and 2.093. | | Answers: | a.  ​-1.729 and 1.729. | |  | b.  ​-2.093 and 2.093. | |  | c.  -​2.086 and 2.086. | |  | d.  -1.725 and ​1.725. | |  |  |  |

* **Question 28**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | As the test statistic becomes larger, the *p*-value |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  gets smaller. | | Answers: | a.  becomes negative. | |  | b.  goes beyond 1. | |  | c.  gets smaller. | |  | d.  becomes larger. | |  |  |  |

* **Question 29**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Read the *t* statistic from the *t* distribution table and circle the correct answer. For a one-tailed test (upper tail), using a sample size of 18, and at the 5% level of significance, *t* = |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  1.740. | | Answers: | a.  -1.740. | |  | b.  -2.12. | |  | c.  1.740. | |  | d.  2.12. | |  |  |  |

* **Question 30**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The critical value of *t* for a two-tailed test with 6 degrees of freedom using *α* = .05 is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  2.447. | | Answers: | a.  2.365. | |  | b.  1.985. | |  | c.  1.943. | |  | d.  2.447. | |  |  |  |

* **Question 31**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The level of significance is the |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  maximum allowable probability of Type I error. | | Answers: | a.  same as the *p*-value. | |  | b.  maximum allowable probability of Type I error. | |  | c.  same as the confidence coefficient. | |  | d.  maximum allowable probability of Type II error. | |  |  |  |

* **Question 32**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Read the *z* statistic from the normal distribution table and circle the correct answer. For a one-tailed test (upper tail) using *α* = .1230,  *z* = |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  1.16. | | Answers: | a.  1.645. | |  | b.  1.96. | |  | c.  1.54. | |  | d.  1.16. | |  |  |  |

* **Question 33**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | For a two-tailed test, the *p*-value is the probability of obtaining a value for the test statistic as |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  unlikely as that provided by the sample. | | Answers: | a.  unlikely as that provided by the sample. | |  | b.  unlikely as that provided by the population. | |  | c.  likely as that provided by the sample. | |  | d.  likely as that provided by the population. | |  |  |  |

* **Question 34**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Two approaches to drawing a conclusion in a hypothesis test are ​ |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  ​*p*-value and critical value. | | Answers: | a.  ​one-tailed and two-tailed. | |  | b.  ​Type I and Type II. | |  | c.  ​null and alternative. | |  | d.  ​*p*-value and critical value. | |  |  |  |

* **Question 35**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The average monthly rent for one-bedroom apartments in Chattanooga has been $700. Because of the downturn in the real estate market, it is believed that there has been a decrease in the average rental. The correct hypotheses to be tested are |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  *H*0: *μ* ≥ 700     *H*a: *μ* < 700. | | Answers: | a.  *H*0: *μ* = 700     *H*a: *μ* ≠ 700. | |  | b.  *H*0: *μ* < 700     *H*a: *μ* ≥ 700. | |  | c.  *H*0: *μ* ≥ 700     *H*a: *μ* < 700. | |  | d.  *H*0: *μ* > 700     *H*a: *μ* ≤ 700. | |  |  |  |

* **Question 36**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Read the *z* statistic from the normal distribution table and circle the correct answer. For a one-tailed test (lower tail) using *α* = .1020, *z* = |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  -1.27. | | Answers: | a.  -1.53. | |  | b.  -1.64. | |  | c.  -1.27. | |  | d.  -1.96. | |  |  |  |

* **Question 37**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | What type of error occurs if you fail to reject *H* 0 when, in fact, it is not true? |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  Type II | | Answers: | a.  either Type I or Type II, depending on the level of significance | |  | b.  Type I | |  | c.  Type II | |  | d.  either Type I or Type II, depending on whether the test is one-tailed or two-tailed | |  |  |  |

* **Question 38**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | For a lower tail test, the *p*-value is the probability of obtaining a value for the test statistic |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  at least as small as that provided by the sample. | | Answers: | a.  at least as large as that provided by the population. | |  | b.  at least as small as that provided by the sample. | |  | c.  at least as large as that provided by the sample. | |  | d.  at least as small as that provided by the population. | |  |  |  |

* **Question 39**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | For the following hypothesis test,  *H*0: *μ* ≥ 150  *H*a: *μ* < 150  ​  the test statistic |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  can be either negative or positive. | | Answers: | a.  must be positive. | |  | b.  must be negative. | |  | c.  can be either negative or positive. | |  | d.  must be a number between zero and one. | |  |  |  |

* **Question 40**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | In hypothesis testing, the tentative assumption about the population parameter is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  the null hypothesis. | | Answers: | a.  the alternative hypothesis. | |  | b.  the null hypothesis. | |  | c.  either the null or the alternative. | |  | d.  neither the null nor the alternative. | |  |  |  |

* **Question 41**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The average life expectancy of tires produced by the Whitney Tire Company has been 40,000 miles. Management believes that due to a new production process, the life expectancy of their tires has increased. In order to test the validity of their belief, the correct set of hypotheses is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  *H*0: *μ*  40,000     *H*a: *μ* > 40,000. | | Answers: | a.  *H*0: *μ* > 40,000     *H*a: *μ*  40,000. | |  | b.  *H*0: *μ*  40,000     *H*a: *μ* < 40,000. | |  | c.  *H*0: *μ* < 40,000     *H*a: *μ*  40,000. | |  | d.  *H*0: *μ*  40,000     *H*a: *μ* > 40,000. | |  |  |  |

* **Question 42**

0 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The sum of the values of *α* and *β* |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  gives the probability of taking the correct decision. | | Answers: | a.  is always 1. | |  | b.  is always .5. | |  | c.  gives the probability of taking the correct decision. | |  | d.  is not needed in hypothesis testing. | |  |  |  |

* **Question 43**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | For a given sample size in hypothesis testing, |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  the smaller the Type I error, the larger the Type II error will be. | | Answers: | a.  the smaller the Type I error, the larger the Type II error will be. | |  | b.  Type II error will not be effected by Type I error. | |  | c.  the smaller the Type I error, the smaller the Type II error will be. | |  | d.  the sum of Type I and Type II errors must equal to 1. | |  |  |  |

* **Question 44**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | A random sample of 100 people was taken. Eighty-five of the people in the sample favored Candidate A. We are interested in determining whether or not the proportion of the population in favor of Candidate A is significantly more than 80%. At the .05 level of significance, it can be concluded that the proportion of the population in favor of candidate A is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  not significantly greater than 80%. | | Answers: | a.  significantly greater than 85%. | |  | b.  not significantly greater than 80%. | |  | c.  significantly greater than 80%. | |  | d.  not significantly greater than 85%. | |  |  |  |

* **Question 45**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Given the following information,  ​  *n* = 49,  = 50, *s* = 7  ​*H*0: *μ* > 52  *H*a: *μ* < 52  ​  the test statistic is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  -2. | | Answers: | a.  -1. | |  | b.  -2. | |  | c.  2. | |  | d.  1. | |  |  |  |

* **Question 46**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | For a one-tailed hypothesis test (upper tail), the *p*-value is computed to be .034. If the test is being conducted at the 5% level of significance, the null hypothesis |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  is rejected. | | Answers: | a.  is rejected. | |  | b.  is not rejected. | |  | c.  could be rejected or not rejected depending on the sample mean. | |  | d.  could be rejected or not rejected depending on the sample size. | |  |  |  |

* **Question 47**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | If the null hypothesis is rejected at the 5% level of significance, it |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  may be rejected or not rejected at the 1% level. | | Answers: | a.  may be rejected or not rejected at the 1% level. | |  | b.  will always be rejected at the 1% level. | |  | c.  will never be tested at the 1% level. | |  | d.  will always not be rejected at the 1% level. | |  |  |  |

* **Question 48**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | In a two-tailed hypothesis test situation, the test statistic is determined to be *t* = -2.692. The sample size has been 45. The *p*-value for this test is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  +.01. | | Answers: | a.  +.005. | |  | b.  -.01. | |  | c.  -.005. | |  | d.  +.01. | |  |  |  |

* **Question 49**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | A random sample of 16 students selected from the student body of a large university had an average age of 25 years and a standard deviation of 2 years. We want to determine if the average age of all the students at the university is significantly more than 24. Assume the distribution of the population of ages is normal. The test statistic is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  2.00. | | Answers: | a.  1.65. | |  | b.  2.00. | |  | c.  1.96. | |  | d.  .05. | |  |  |  |

* **Question 50**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The power curve provides the probability of |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  correctly rejecting the null hypothesis. | | Answers: | a.  incorrectly rejecting the null hypothesis. | |  | b.  correctly rejecting the null hypothesis. | |  | c.  correctly accepting the null hypothesis. | |  | d.  incorrectly accepting the null hypothesis. | |  |  |  |

* **Question 51**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Read the *z* statistic from the normal distribution table and circle the correct answer. For a two-tailed test using *α* = .0160, *z* = |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  2.41. | | Answers: | a.  1.14. | |  | b.  2.41. | |  | c.  1.96. | |  | d.  .86. | |  |  |  |

* **Question 52**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The manager of a laptop computer dealership is considering a new bonus plan in order to increase sales. Currently, the mean sales rate per salesperson is five laptops per week. The correct set of hypotheses for testing the effect of the bonus plan is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  *H*0: *μ*  5     *H*a: *μ* > 5. | | Answers: | a.  *H*0: *μ*  5     *H*a: *μ* < 5. | |  | b.  *H*0: *μ*  5     *H*a: *μ* > 5. | |  | c.  *H*0: *μ* > 5     *H*a: *μ*  5. | |  | d.  *H*0: *μ* < 5     *H*a: *μ* ≥ 5. | |  |  |  |

* **Question 53**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | For a lower tail test, the test statistic *z* is determined to be zero. The *p*-value for this test is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  +.5. | | Answers: | a.  zero. | |  | b.  +.5. | |  | c.  1. | |  | d.  -.5. | |  |  |  |

* **Question 54**

0 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | If the null hypothesis is rejected at the .05 level of significance, it will |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  sometimes be rejected at the .10 level of significance. | | Answers: | a.  always not be rejected at the .10 level of significance. | |  | b.  always be rejected at the .10 level of significance. | |  | c.  sometimes be rejected at the .10 level of significance. | |  | d.  sometimes not be rejected at the .10 level of significance. | |  |  |  |

* **Question 55**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The *p*-value is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  a probability. | | Answers: | a.  the same as the *z* statistic. | |  | b.  a probability. | |  | c.  a sample statistic. | |  | d.  a distance. | |  |  |  |

* **Question 56**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Read the *t* statistic from the *t* distribution table and circle the correct answer. For a one-tailed test (lower tail), using a sample size of 10, and at the 10% level of significance, *t* = |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  -1.383. | | Answers: | a.  -2.821. | |  | b.  -1.383. | |  | c.  2.821. | |  | d.  1.383. | |  |  |  |

* **Question 57**

0 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | In order to test the following hypotheses at an *α* level of significance  ​  *H*0: *μ*  800  *H*a: *μ* > 800  ​  the null hypothesis will be rejected, if the test statistic *z* is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  = *α*. | | Answers: | a.  *zα*. | |  | b.  < *zα*. | |  | c.  = *α*. | |  | d.  < -*zα*. | |  |  |  |

* **Question 58**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | For a lower tail hypothesis test with a sample size of 10 and a .10 level of significance, the critical value of the test statistic *t* is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  ​-1.383. | | Answers: | a.  ​-1.383. | |  | b.  ​-1.372. | |  | c.  ​-1.833. | |  | d.  ​-1.812. | |  |  |  |

* **Question 59**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | A grocery store has an average sales of $8000 per day. The store introduced several advertising campaigns in order to increase sales. To determine whether or not the advertising campaigns have been effective in increasing sales, a sample of 64 days of sales was selected. It was found that the average was $8300 per day. From past information, it is known that the standard deviation of the population is $1200. The correct null hypothesis for this problem is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  *μ* < 8000. | | Answers: | a.  *μ* < 8000. | |  | b.  *μ* ≤ 8300. | |  | c.  *μ* = 8000. | |  | d.  *μ* > 8300. | |  |  |  |

* **Question 60**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The practice of concluding “do not reject *H*0” is preferred over “accept *H*0” when we​ |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  ​have not controlled for the Type II error. | | Answers: | a.  ​have not controlled for the Type II error. | |  | b.  ​are conducting a one-tailed test. | |  | c.  ​have an insufficient sample size. | |  | d.  ​are testing the validity of a claim. | |  |  |  |

* **Question 61**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | If the probability of a Type I error ( *α*) is .05, then the probability of a Type II error ( *β*) must be |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  Cannot be computed. | | Answers: | a.  .05. | |  | b.  .95. | |  | c.  .025. | |  | d.  Cannot be computed. | |  |  |  |

* **Question 62**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Which of the following does **not** need to be known in order to compute the *p*-value? |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  the level of significance | | Answers: | a.  knowledge of whether the test is one-tailed or two-tailed | |  | b.  the value of the test statistic | |  | c.  the level of significance | |  | d.  the probability distribution of the test statistic | |  |  |  |

* **Question 63**

0 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | If a hypothesis test leads to the rejection of the null hypothesis, |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  a Type I error must have been committed. | | Answers: | a.  a Type II error must have been committed. | |  | b.  a Type I error must have been committed. | |  | c.  a Type I error may have been committed. | |  | d.  a Type II error may have been committed. | |  |  |  |

* **Question 64**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | A juice drink filling machine, when in perfect adjustment, fills the bottles with 12 ounces of drink on an average. Any overfilling or underfilling results in the shutdown and readjustment of the machine. To determine whether or not the machine is properly adjusted, the correct set of hypotheses is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  *H*0: *μ* = 12     *H*a: *μ* ≠ 12. | | Answers: | a.  *H*0: *μ* ≠ 12     *H*a: *μ* = 12. | |  | b.  *H*0: *μ* < 12     *H*a: *μ* ≥ 12. | |  | c.  *H*0: *μ*  12     *H*a: *μ* > 12. | |  | d.  *H*0: *μ* = 12     *H*a: *μ* ≠ 12. | |  |  |  |

* **Question 65**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | A grocery store has an average sales of $8000 per day. The store introduced several advertising campaigns in order to increase sales. To determine whether or not the advertising campaigns have been effective in increasing sales, a sample of 64 days of sales was selected. It was found that the average was $8300 per day. From past information, it is known that the standard deviation of the population is $1200. The *p-*value is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  .0228. | | Answers: | a.  .0228. | |  | b.  2.000. | |  | c.  .9772. | |  | d.  .5475. | |  |  |  |

* **Question 66**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | As a general guideline, the research hypothesis should be stated as the​ |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  ​alternative hypothesis. | | Answers: | a.  ​hypothesis the researcher wants to disprove. | |  | b.  ​alternative hypothesis. | |  | c.  ​tentative hypothesis. | |  | d.  ​null hypothesis. | |  |  |  |

* **Question 67**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | When the *p*-value is used for hypothesis testing, the null hypothesis is rejected if |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  *p*-value  *α*. | | Answers: | a.  *p*-value = 1 - *α*/2. | |  | b.  *α* < *p*-value. | |  | c.  *p*-value  *α*. | |  | d.  *p*-value = 1 - *α*. | |  |  |  |

* **Question 68**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | A random sample of 16 students selected from the student body of a large university had an average age of 25 years and a standard deviation of 2 years. We want to determine if the average age of all the students at the university is significantly more than 24. Assume the distribution of the population of ages is normal. The *p*-value is between |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  .025 to .05. | | Answers: | a.  .05 to .10. | |  | b.  .01 to .025. | |  | c.  .025 to .05. | |  | d.  .005 to .01. | |  |  |  |

* **Question 69**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | A random sample of 100 people was taken. Eighty-five of the people in the sample favored Candidate A. We are interested in determining whether or not the proportion of the population in favor of Candidate A is significantly more than 80%. The test statistic is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  1.25. | | Answers: | a.  .05. | |  | b.  1.25. | |  | c.  2.00. | |  | d.  .80. | |  |  |  |

* **Question 70**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | A school's newspaper reported that the proportion of students majoring in business is at least 30%. You plan on taking a sample to test the newspaper's claim. The correct set of hypotheses is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  *H*0: *p*  .30     *H*a: *p* < .30. | | Answers: | a.  *H*0: *p*  .30     *H*a: *p* > .30. | |  | b.  *H*0: *p*  .30     *H*a: *p* < .30. | |  | c.  *H*0: *p* < .30     *H*a: *p*  .30. | |  | d.  *H*0: *p* > .30     *H*a: *p*  .30. | |  |  |  |

* **Question 71**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | A Type I error is committed when​ |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  ​a true null hypothesis is rejected. | | Answers: | a.  ​the critical value is greater than the value of the test statistic. | |  | b.  ​sample data contradict the null hypothesis. | |  | c.  ​a true null hypothesis is rejected. | |  | d.  ​a true alternative hypothesis is not accepted. | |  |  |  |

* **Question 72**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | In a lower tail hypothesis test situation, the *p*-value is determined to be .2. If the sample size for this test is 51, the *t* statistic has a value of |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  -.849. | | Answers: | a.  -.849. | |  | b.  .849. | |  | c.  1.299. | |  | d.  -1.299. | |  |  |  |

* **Question 73**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The probability of making a Type II error is denoted by |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  *β*. | | Answers: | a.  1 - *α*. | |  | b.  1 - *β*. | |  | c.  *α*. | |  | d.  *β*. | |  |  |  |

* **Question 74**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | ​In hypothesis testing, the critical value is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  ​a number that establishes the boundary of the rejection region. | | Answers: | a.  ​the probability of a Type II error. | |  | b.  ​the same as the *p*-value. | |  | c.  ​a number that establishes the boundary of the rejection region. | |  | d.  ​the probability of a Type I error. | |  |  |  |

* **Question 75**

0 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | A random sample of 16 students selected from the student body of a large university had an average age of 25 years and a standard deviation of 2 years. We want to determine if the average age of all the students at the university is significantly more than 24. Assume the distribution of the population of ages is normal. Using *α* = .05, it can be concluded that the population mean age is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  not significantly different from 24. | | Answers: | a.  significantly more than 24. | |  | b.  significantly less than 24. | |  | c.  significantly different from 24. | |  | d.  not significantly different from 24. | |  |  |  |

Wednesday, March 4, 2020 8:30:48 PM PST