* **Question 1**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | A statistics teacher wants to see if there is any difference in the abilities of students enrolled in statistics today and those enrolled five years ago. A sample of final examination scores from students enrolled today and from students enrolled five years ago was taken. You are given the following information.   |  |  |  | | --- | --- | --- | |  | **Today** | **Five Years Ago** | |  | 82 | 88 | | *σ*2 | 112.5 | 54 | | *n* | 45 | 36 |   ​  The point estimate for the difference between the means of the two populations is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  -6. | | Answers: | a.  9. | |  | b.  -9. | |  | c.  -6. | |  | d.  58.5. | |  |  |  |

* **Question 2**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | A statistics teacher wants to see if there is any difference in the abilities of students enrolled in statistics today and those enrolled five years ago. A sample of final examination scores from students enrolled today and from students enrolled five years ago was taken. You are given the following information.   |  |  |  | | --- | --- | --- | |  | **Today** | **Five Years Ago** | |  | 82 | 88 | | *σ*2 | 112.5 | 54 | | *n* | 45 | 36 |   ​  The *p*-value for the difference between the two population means is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  .0026. | | Answers: | a.  .0026. | |  | b.  .0013. | |  | c.  .9987. | |  | d.  .4987. | |  |  |  |

* **Question 3**

0.5 out of 0.5 points

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|  |  | | | |
|  | The management of a department store is interested in estimating the difference between the mean credit purchases of customers using the store's credit card versus those customers using a national major credit card. You are given the following information.   |  |  |  | | --- | --- | --- | |  | **Store's Card** | **Major Credit Card** | | Sample size | 64 | 49 | | Sample mean | $140 | $125 | | Population standard deviation | $10 | $8 |   ​  A point estimate for the difference between the mean purchases of all users of the two credit cards is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  15. | | Answers: | a.  18. | |  | b.  2. | |  | c.  265. | |  | d.  15. | |  |  |  |

* **Question 4**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | In order to estimate the difference between the average hourly wages of employees of two branches of a department store, the following data have been gathered.   |  |  |  | | --- | --- | --- | |  | **Downtown Store** | **North Mall Store** | | Sample size | 25 | 20 | | Sample mean | $9 | $8 | | Sample standard deviation | $2 | $1 |   ​  A point estimate for the difference between the two population means is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  1. | | Answers: | a.  2. | |  | b.  3. | |  | c.  1. | |  | d.  4. | |  |  |  |

* **Question 5**

0 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | An insurance company selected samples of clients under 18 years of age and over 18 and recorded the number of accidents they had in the previous year. The results are shown below.   |  |  | | --- | --- | | **Under Age of 18** | **Over Age of 18** | | *n*1 = 500 | *n*2 = 600 | | Number of accidents = 180 | Number of accidents = 150 |   ​  We are interested in determining if the accident proportions differ between the two age groups. Let *p*u represent the proportion under and *p*o the proportion over the age of 18. The null hypothesis is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  *p*u - *p*o ≥ 0. | | Answers: | a.  *p*u - *p*o ≠ 0. | |  | b.  *p*u - *p*o = 0. | |  | c.  *p*u - *p*o ≥ 0. | |  | d.  *p*u - *p*o ≤ 0. | |  |  |  |

* **Question 6**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Two independent simple random samples are taken to test the difference between the means of two populations whose variances are not known, but are assumed to be equal. The sample sizes are *n* 1 = 32 and *n* 2 = 40. The correct distribution to use is the |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  *t* distribution with 70 degrees of freedom. | | Answers: | a.  *t* distribution with 70 degrees of freedom. | |  | b.  *t* distribution with 72 degrees of freedom. | |  | c.  *t* distribution with 73 degrees of freedom. | |  | d.  *t* distribution with 71 degrees of freedom. | |  |  |  |

* **Question 7**

0.5 out of 0.5 points

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|  |  | | | |
|  | The following information was obtained from independent random samples taken of two populations. Assume normally distributed populations with equal variances.   |  |  |  | | --- | --- | --- | |  | **Sample 1** | **Sample 2** | | Sample Mean | 45 | 42 | | Sample Variance | 85 | 90 | | Sample Size | 10 | 12 |   ​  The degrees of freedom for the *t* distribution are |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  20. | | Answers: | a.  20. | |  | b.  22. | |  | c.  24. | |  | d.  21. | |  |  |  |

* **Question 8**

0 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The following information was obtained from matched samples  taken from two populations. Assume the population of differences is normally distributed.   |  |  |  | | --- | --- | --- | | **Individual** | **Method 1** | **Method 2** | | 1 | 7 | 5 | | 2 | 5 | 9 | | 3 | 6 | 8 | | 4 | 7 | 7 | | 5 | 5 | 6 |   ​  The 95% confidence interval for the difference between the two population means is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  -2.776 to 2.776. | | Answers: | a.  -2.776 to 2.776. | |  | b.  -1.776 to 1.776. | |  | c.  -3.776 to 1.776. | |  | d.  -1.776 to 2.776. | |  |  |  |

* **Question 9**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | If we are interested in testing whether the proportion of items in population 1 is larger than the proportion of items in population 2, the |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  alternative hypothesis should state *p*1 - *p*2 > 0. | | Answers: | a.  null hypothesis should state *p*1 - *p*2 > 0. | |  | b.  alternative hypothesis should state *p*1 - *p*2 < 0. | |  | c.  alternative hypothesis should state *p*1 - *p*2 > 0. | |  | d.  null hypothesis should state *p*1 - *p*2 < 0. | |  |  |  |

* **Question 10**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The results of a recent poll on the preference of shoppers regarding two products are shown below.   |  |  |  | | --- | --- | --- | | **Product** | **Shoppers Surveyed** | **Shoppers Favoring This Product** | | A | 800 | 560 | | B | 900 | 612 |   ​  The 95% confidence interval estimate for the difference between the populations favoring the products is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  -.024 to .064. | | Answers: | a.  -.024 to .7. | |  | b.  .046 to .066. | |  | c.  -.024 to .064. | |  | d.  .6 to .7. | |  |  |  |

* **Question 11**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Salary information regarding male and female employees of a large company is shown below.   |  |  |  | | --- | --- | --- | |  | **Male** | **Female** | | Sample Size | 64 | 36 | | Sample Mean Salary (in $1000) | 44 | 41 | | Population Variance () | 128 | 72 |   ​  If you are interested in testing whether or not the population average salary of males is significantly greater than that of females, the *p*-value is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  .0668. | | Answers: | a.  .9332. | |  | b.  .1336. | |  | c.  .0668. | |  | d.  .0334. | |  |  |  |

* **Question 12**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The results of a recent poll on the preference of shoppers regarding two products are shown below.   |  |  |  | | --- | --- | --- | | **Product** | **Shoppers Surveyed** | **Shoppers Favoring This Product** | | A | 800 | 560 | | B | 900 | 612 |   ​  At 95% confidence, the margin of error is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  .044. | | Answers: | a.  .0225. | |  | b.  .025. | |  | c.  .064. | |  | d.  .044. | |  |  |  |

* **Question 13**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | A statistics teacher wants to see if there is any difference in the abilities of students enrolled in statistics today and those enrolled five years ago. A sample of final examination scores from students enrolled today and from students enrolled five years ago was taken. You are given the following information.   |  |  |  | | --- | --- | --- | |  | **Today** | **Five Years Ago** | |  | 82 | 88 | | *σ*2 | 112.5 | 54 | | *n* | 45 | 36 |   ​  What is the conclusion that can be reached about the difference in the average final examination scores between the two classes? (Use a .05 level of significance.) |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  There is a statistically significant difference in the average final examination scores between the two classes. | | Answers: | a.  The students who enrolled in statistics today are the same students who enrolled five years ago. | |  | b.  There is a statistically significant difference in the average final examination scores between the two classes. | |  | c.  There is no statistically significant difference in the average final examination scores between the two classes. | |  | d.  It is impossible to make a decision on the basis of the information given. | |  |  |  |

* **Question 14**

0 out of 0.5 points

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|  |  | | | |
|  | In testing the null hypothesis *H*0: *μ*1  -   *μ* 2 = 0, the computed test statistic is *z* = -1.66. The corresponding *p*-value is​ |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  ​.9515. | | Answers: | a.  ​.0970. | |  | b.  ​.9030. | |  | c.  ​.0485. | |  | d.  ​.9515. | |  |  |  |

* **Question 15**

0.5 out of 0.5 points

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|  | In order to determine whether or not there is a significant difference between the mean hourly wages paid by two companies (of the same industry), the following data have been accumulated.   |  |  |  | | --- | --- | --- | |  | **Company A** | **Company B** | | Sample size | 80 | 60 | | Sample mean | $16.75 | $16.25 | | Population standard deviation | $1.00 | $.95 |   ​  The *p*-value is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  .0026. | | Answers: | a.  .0013. | |  | b.  .0026. | |  | c.  .0042. | |  | d.  .0084. | |  |  |  |

* **Question 16**

0.5 out of 0.5 points

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|  |  | | | |
|  | Generally, the \_\_\_\_\_\_\_\_ sample procedure for inferences about two population means provides better precision than the \_\_\_\_\_\_\_ sample approach.​ |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  ​matched, independent | | Answers: | a.  ​matched, pooled | |  | b.  ​matched, independent | |  | c.  ​independent, pooled​ | |  | d.  ​single, independent | |  |  |  |

* **Question 17**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The results of a recent poll on the preference of teenagers regarding the types of music they listen to are shown below.   |  |  |  | | --- | --- | --- | | **Music Type** | **Teenagers Surveyed** | **Teenagers Favoring This Type** | | Pop | 800 | 384 | | Rap | 900 | 450 |   ​  The point estimate of the difference between the two population proportions is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  -.02. | | Answers: | a.  -.02. | |  | b.  .52. | |  | c.  -.5. | |  | d.  .048. | |  |  |  |

* **Question 18**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The following information was obtained from matched samples taken from two populations. The daily production rates for a sample of workers before and after a training program are shown below. Assume the population of differences is normally distributed.   |  |  |  | | --- | --- | --- | | **Worker** | **Before** | **After** | | 1 | 20 | 22 | | 2 | 25 | 23 | | 3 | 27 | 27 | | 4 | 23 | 20 | | 5 | 22 | 25 | | 6 | 20 | 19 | | 7 | 17 | 18 |   ​  Given that the null hypothesis to be tested is *H*0: *μd* = 0, |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  the null hypothesis should not be rejected. | | Answers: | a.  the null hypothesis should be rejected. | |  | b.  the null hypothesis should not be rejected. | |  | c.  the alternative hypothesis should be revised. | |  | d.  the null hypothesis should be revised. | |  |  |  |

* **Question 19**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The following information was obtained from matched samples taken from two populations. The daily production rates for a sample of workers before and after a training program are shown below. Assume the population of differences is normally distributed.   |  |  |  | | --- | --- | --- | | **Worker** | **Before** | **After** | | 1 | 20 | 22 | | 2 | 25 | 23 | | 3 | 27 | 27 | | 4 | 23 | 20 | | 5 | 22 | 25 | | 6 | 20 | 19 | | 7 | 17 | 18 |   ​  The null hypothesis to be tested is *H*0: *μd* = 0. The test statistic is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  0. | | Answers: | a.  1.77. | |  | b.  -1.96. | |  | c.  1.00. | |  | d.  0. | |  |  |  |

* **Question 20**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | A statistics teacher wants to see if there is any difference in the abilities of students enrolled in statistics today and those enrolled five years ago. A sample of final examination scores from students enrolled today and from students enrolled five years ago was taken. You are given the following information.   |  |  |  | | --- | --- | --- | |  | **Today** | **Five Years Ago** | |  | 82 | 88 | | *σ*2 | 112.5 | 54 | | *n* | 45 | 36 |   ​  The standard error of  -  is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  2. | | Answers: | a.  9.3. | |  | b.  12.9. | |  | c.  4. | |  | d.  2. | |  |  |  |

* **Question 21**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Salary information regarding male and female employees of a large company is shown below.   |  |  |  | | --- | --- | --- | |  | **Male** | **Female** | | Sample Size | 64 | 36 | | Sample Mean Salary (in $1000) | 44 | 41 | | Population Variance () | 128 | 72 |   ​  If you are interested in testing whether or not the population average salary of males is significantly greater than that of females, at *α* = .05, the conclusion is that the population |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  average salary of males is greater than females cannot be proved. | | Answers: | a.  average salary of males is significantly greater than females. | |  | b.  average salary of males is significantly lower than females. | |  | c.  salaries of males and females are equal. | |  | d.  average salary of males is greater than females cannot be proved. | |  |  |  |

* **Question 22**

0 out of 0.5 points

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|  |  | | | |
|  | Two major automobile manufacturers have produced compact cars with  engines of the same size . We are interested in determining whether or not there is a significant difference in the mean MPG (miles per gallon)  when testing for the fuel efficiency of these  two brands of automobiles. A random sample of eight cars from each manufacturer is selected, and eight drivers are selected to drive each automobile for a specified distance. The following data  (in miles per gallon)  show the results of the test.  Assume the population of differences is normally distributed.   |  |  |  | | --- | --- | --- | | **Driver** | **Manufacturer A** | **Manufacturer B** | | 1 | 32 | 28 | | 2 | 27 | 22 | | 3 | 26 | 27 | | 4 | 26 | 24 | | 5 | 25 | 24 | | 6 | 29 | 25 | | 7 | 31 | 28 | | 8 | 25 | 27 |   ​  At *α* = .10, the null hypothesis |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  should not be rejected. | | Answers: | a.  should not be rejected. | |  | b.  should be rejected. | |  | c.  should be revised. | |  | d.  should not be tested. | |  |  |  |

* **Question 23**

0.5 out of 0.5 points

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|  |  | | | |
|  | The standard error of  -  is the |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  standard deviation of the sampling distribution of  - . | | Answers: | a.  margin of error of  - .​ | |  | b.  pooled estimator of  - . | |  | c.  variance of the sampling distribution of  - . | |  | d.  standard deviation of the sampling distribution of  - . | |  |  |  |

* **Question 24**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The results of a recent poll on the preference of shoppers regarding two products are shown below.   |  |  |  | | --- | --- | --- | | **Product** | **Shoppers Surveyed** | **Shoppers Favoring This Product** | | A | 800 | 560 | | B | 900 | 612 |   ​  The standard error of  -  is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  .0225. | | Answers: | a.  .025. | |  | b.  .0225. | |  | c.  .044. | |  | d.  .68. | |  |  |  |

* **Question 25**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | In order to estimate the difference between the average hourly wages of employees of two branches of a department store, the following data have been gathered.   |  |  |  | | --- | --- | --- | |  | **Downtown Store** | **North Mall Store** | | Sample size | 25 | 20 | | Sample mean | $9 | $8 | | Sample standard deviation | $2 | $1 |   ​  A 95% interval estimate for the difference between the two population means is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  .071 to 1.929. | | Answers: | a.  .071 to 1.929. | |  | b.  1.078 to 2.922. | |  | c.  .226 to 1.774. | |  | d.  1.09 to 4.078. | |  |  |  |

* **Question 26**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Two independent simple random samples are taken to test the difference between the means of two populations whose standard deviations are not known, but are assumed to be equal. The sample sizes are *n* 1 = 25 and *n* 2 = 35. The correct distribution to use is the |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  *t* distribution with 58 degrees of freedom. | | Answers: | a.  *t* distribution with 59 degrees of freedom. | |  | b.  *t* distribution with 61 degrees of freedom. | |  | c.  *t* distribution with 60 degrees of freedom. | |  | d.  *t* distribution with 58 degrees of freedom. | |  |  |  |

* **Question 27**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Salary information regarding male and female employees of a large company is shown below.   |  |  |  | | --- | --- | --- | |  | **Male** | **Female** | | Sample Size | 64 | 36 | | Sample Mean Salary (in $1000) | 44 | 41 | | Population Variance () | 128 | 72 |   ​  The standard error of the difference between the two sample means is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  2.0. | | Answers: | a.  4.24. | |  | b.  7.46. | |  | c.  4. | |  | d.  2.0. | |  |  |  |

* **Question 28**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The following information was obtained from matched samples  taken from two populations. Assume the population of differences is normally distributed.   |  |  |  | | --- | --- | --- | | **Individual** | **Method 1** | **Method 2** | | 1 | 7 | 5 | | 2 | 5 | 9 | | 3 | 6 | 8 | | 4 | 7 | 7 | | 5 | 5 | 6 |   ​  The null hypothesis tested is *H*0: *μd* = 0. The test statistic for the difference between the two population means is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  -1. | | Answers: | a.  -1. | |  | b.  2. | |  | c.  0. | |  | d.  -2. | |  |  |  |

* **Question 29**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | In hypothesis tests about *p*1 - *p*2, the pooled estimator of *p* is a​(n) |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  ​weighted average of  and . | | Answers: | a.  ​geometric average of  and . | |  | b.  ​exponential average of  and . | |  | c.  ​weighted average of  and . | |  | d.  ​simple average of  and ​. | |  |  |  |

* **Question 30**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | Salary information regarding male and female employees of a large company is shown below.   |  |  |  | | --- | --- | --- | |  | **Male** | **Female** | | Sample Size | 64 | 36 | | Sample Mean Salary (in $1000) | 44 | 41 | | Population Variance () | 128 | 72 |   ​  The 95% confidence interval for the difference between the means of the two populations is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  -.92 to 6.92. | | Answers: | a.  -2 to 2. | |  | b.  -.92 to 6.92. | |  | c.  -1.96 to 1.96. | |  | d.  0 to 6.92. | |  |  |  |

* **Question 31**

0.5 out of 0.5 points

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| --- | --- | --- | --- | --- |
|  |  | | | |
|  | An insurance company selected samples of clients under 18 years of age and over 18 and recorded the number of accidents they had in the previous year. The results are shown below.   |  |  | | --- | --- | | **Under Age of 18** | **Over Age of 18** | | *n*1 = 500 | *n*2 = 600 | | Number of accidents = 180 | Number of accidents = 150 |   ​  We are interested in determining if the accident proportions differ between the two age groups.  The pooled estimator of the population proportion is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  .300. | | Answers: | a.  .300. | |  | b.  .305. | |  | c.  .450. | |  | d.  .027. | |  |  |  |

* **Question 32**

0.5 out of 0.5 points

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | | | |
|  | The sampling distribution of  -  is approximated by a |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  normal distribution. | | Answers: | a.   -  distribution. | |  | b.  *t* distribution with *n*1 + *n*2 - 1 degrees of freedom. | |  | c.  *t* distribution with *n*1 + *n*2 degrees of freedom. | |  | d.  normal distribution. | |  |  |  |

* **Question 33**

0 out of 0.5 points

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|  | The following information was obtained from independent random samples taken of two populations. Assume normally distributed populations with equal variances.   |  |  |  | | --- | --- | --- | |  | **Sample 1** | **Sample 2** | | Sample Mean | 45 | 42 | | Sample Variance | 85 | 90 | | Sample Size | 10 | 12 |   ​  The 95% confidence interval for the difference between the two population means is (use rounded standard error) |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  -4.86 to 10.86. | | Answers: | a.  -5 to 3. | |  | b.  -2.65 to 8.65. | |  | c.  -5.344 to 11.344. | |  | d.  -4.86 to 10.86. | |  |  |  |

* **Question 34**

0.5 out of 0.5 points

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|  | To compute an interval estimate for the difference between the means of two populations, the *t* distribution |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  is not restricted to small sample situations. | | Answers: | a.  is restricted to small sample situations. | |  | b.  is not restricted to small sample situations. | |  | c.  can be applied when the populations have equal means. | |  | d.  can be applied only when the populations have equal standard deviations. | |  |  |  |

* **Question 35**

0.5 out of 0.5 points

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|  | The following information was obtained from independent random samples taken of two populations. Assume normally distributed populations with equal variances.   |  |  |  | | --- | --- | --- | |  | **Sample 1** | **Sample 2** | | Sample Mean | 45 | 42 | | Sample Variance | 85 | 90 | | Sample Size | 10 | 12 |   ​  The standard error of  -  is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  4. | | Answers: | a.  4. | |  | b.  8.372. | |  | c.  3.0. | |  | d.  19.48. | |  |  |  |

* **Question 36**

0.5 out of 0.5 points

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|  | The results of a recent poll on the preference of shoppers regarding two products are shown below.   |  |  |  | | --- | --- | --- | | **Product** | **Shoppers Surveyed** | **Shoppers Favoring This Product** | | A | 800 | 560 | | B | 900 | 612 |   ​  The point estimate for the difference between the two population proportions in favor of this product is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  .02. | | Answers: | a.  .44. | |  | b.  .07. | |  | c.  .68. | |  | d.  .02. | |  |  |  |

* **Question 37**

0.5 out of 0.5 points

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|  | To construct an interval estimate for the difference between the means of two populations when the standard deviations of the two populations are unknown and it can be assumed the two populations have equal variances, we must use a *t* distribution with (let *n* 1 be the size of sample 1 and *n* 2 the size of sample 2) |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  (*n*1 + *n*2 - 2) degrees of freedom. | | Answers: | a.  (*n*1 + *n*2) degrees of freedom. | |  | b.  (*n*1 + *n*2 - 2) degrees of freedom. | |  | c.  (*n*1 - *n*2 + 2) degrees of freedom. | |  | d.  (*n*1 + *n*2 - 1) degrees of freedom. | |  |  |  |

* **Question 38**

0.5 out of 0.5 points

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|  | Of the two production methods, a company wants to identify the method with the smaller population mean completion time. One sample of workers is selected and each worker first uses one method and then uses the other method. The sampling procedure being used to collect completion time data is based on​ |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  ​matched samples. | | Answers: | a.  ​worker samples. | |  | b.  ​pooled samples. | |  | c.  ​matched samples. | |  | d.  ​independent samples. | |  |  |  |

* **Question 39**

0.5 out of 0.5 points

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|  | The management of a department store is interested in estimating the difference between the mean credit purchases of customers using the store's credit card versus those customers using a national major credit card. You are given the following information.   |  |  |  | | --- | --- | --- | |  | **Store's Card** | **Major Credit Card** | | Sample size | 64 | 49 | | Sample mean | $140 | $125 | | Population standard deviation | $10 | $8 |   ​  At 95% confidence, the margin of error is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  3.32. | | Answers: | a.  1.694. | |  | b.  3.32. | |  | c.  15. | |  | d.  1.96. | |  |  |  |

* **Question 40**

0.5 out of 0.5 points

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|  | The results of a recent poll on the preference of teenagers regarding the types of music they listen to are shown below.   |  |  |  | | --- | --- | --- | | **Music Type** | **Teenagers Surveyed** | **Teenagers Favoring This Type** | | Pop | 800 | 384 | | Rap | 900 | 450 |   ​  The 95% confidence interval for the difference between the two population proportions is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | d.  -.068 to .028. | | Answers: | a.  .5 to .52. | |  | b.  .48 to .5. | |  | c.  .028 to .068. | |  | d.  -.068 to .028. | |  |  |  |

* **Question 41**

0.5 out of 0.5 points

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|  | The following information was obtained from matched samples taken from two populations. Assume the population of differences is normally distributed.   |  |  |  | | --- | --- | --- | | **Individual** | **Method 1** | **Method 2** | | 1 | 7 | 5 | | 2 | 5 | 9 | | 3 | 6 | 8 | | 4 | 7 | 7 | | 5 | 5 | 6 |   ​  The point estimate for the difference between the means of the two populations (Method 1 - Method 2) is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | c.  -1. | | Answers: | a.  -4. | |  | b.  2. | |  | c.  -1. | |  | d.  0. | |  |  |  |

* **Question 42**

0.5 out of 0.5 points

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|  | Salary information regarding male and female employees of a large company is shown below.   |  |  |  | | --- | --- | --- | |  | **Male** | **Female** | | Sample Size | 64 | 36 | | Sample Mean Salary (in $1000) | 44 | 41 | | Population Variance () | 128 | 72 |   ​  The point estimate of the difference between the means of the two populations is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  3. | | Answers: | a.  3. | |  | b.  4. | |  | c.  -4. | |  | d.  -28. | |  |  |  |

* **Question 43**

0.5 out of 0.5 points

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|  | The following information was obtained from matched samples  taken from two populations. Assume the population of differences is normally distributed.   |  |  |  | | --- | --- | --- | | **Individual** | **Method 1** | **Method 2** | | 1 | 7 | 5 | | 2 | 5 | 9 | | 3 | 6 | 8 | | 4 | 7 | 7 | | 5 | 5 | 6 |   ​  If the null hypothesis *H*0: *μd* = 0 is tested at the 5% level, |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  the null hypothesis should not be rejected. | | Answers: | a.  the null hypothesis should be rejected. | |  | b.  the null hypothesis should not be rejected. | |  | c.  the alternative hypothesis should be revised. | |  | d.  the null hypothesis should be revised. | |  |  |  |

* **Question 44**

0.5 out of 0.5 points

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|  | Salary information regarding male and female employees of a large company is shown below.   |  |  |  | | --- | --- | --- | |  | **Male** | **Female** | | Sample Size | 64 | 36 | | Sample Mean Salary (in $1000) | 44 | 41 | | Population Variance () | 128 | 72 |   ​  At 95% confidence, the margin of error is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | b.  3.920. | | Answers: | a.  1.645. | |  | b.  3.920. | |  | c.  1.960. | |  | d.  2.000. | |  |  |  |

* **Question 45**

0.5 out of 0.5 points

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|  | In order to determine whether or not there is a significant difference between the mean hourly wages paid by two companies (of the same industry), the following data have been accumulated.   |  |  |  | | --- | --- | --- | |  | **Company A** | **Company B** | | Sample size | 80 | 60 | | Sample mean | $16.75 | $16.25 | | Population standard deviation | $1.00 | $.95 |   ​  The test statistic is |  |  |  |
| |  |  | | --- | --- | | Selected Answer: | a.  3.01. | | Answers: | a.  3.01. | |  | b.  .098. | |  | c.  2.75. | |  | d.  1.645. | |  |  |  |

Tuesday, March 10, 2020 3:38:05 PM PDT