**Name: Bhumika Maharjan**

**Roll No: 22081027**

**Q NO. 3 Solution:**

**1.Working Expression:**

t=Sample mean−Population mean

Standard error

**2.Working Procedure:**

Go to Analysis -> compare means -> one sample t-test -> put in test variables ->

options, 95% -> continue -> test value=30 -> ok

**3.SPSS OUTPUT:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **One-Sample Test** | | | | | | |
|  | Test Value = 30 | | | | | |
| t | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Time in minutes | 1.484 | 23 | .151 | 3.667 | -1.44 | 8.78 |

**4.Setting of Hypothesis**

Ho: The time spent by customers is equal to 30 minutes

H1: The time spent by customers is more than 30 minutes (one tailed test)

Here, p-value (two tailed) (2p) = 0.15

P = 0.075(one tailed)

α = 0.05

**5.Decision:**

Since p = 0.075 > α = 0.05, we accept Ho and H1 is rejected.

**6.Conclusion:**

Hence, we conclude that time spent by customers is equal to 30 minutes.

**Name: Bhumika Maharjan**

**Roll No: 22081027**

**Q.No 4: Solution:**

**1.Working Expression:**

t= Sample mean−Population mean

Standard error

**2.Working Procedure:**

Go to Analysis -> compare means -> one sample t-test -> put in test variables ->

options, 95% -> continue -> test value=30 -> ok

**3.SPSS OUTPUT:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **One-Sample Test** | | | | | | |
|  | Test Value = 100 | | | | | |
| t | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Mbps | -2.149 | 97 | .034 | -3.276 | -6.30 | -.25 |

**4.Setting of Hypothesis:**

H0: Population mean is 100 Mbps.

H1: Population mean is not 100 Mbps.

Here, p-value (two tailed)(2p)= 0.034

α = 0.05

**5.Decision:**

(2p)=0.034< α = 0.05, we reject H0 and accept H1

**6.Conclusion:**

Hence, we conclude that the population mean is not 100 Mbps.

**Name: Bhumika Maharjan**

**Roll No: 22081027**

Q.no 5 Solution:

1.Working Expression:

t = \_\_\_\_\_\_\_dbar\_\_\_\_\_\_\_\_\_

Standard error

2.Working Procedure:

Analyze -> Compare mean -> Pared sample t-test -> Put before training in

variable 1 -> Put after training in variable 2 -> Option, fix 95% -> Continue -> Ok

3.SPSS OUTPUT:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Paired Samples Test** | | | | | | | | | |
|  | | Paired Differences | | | | | t |  |  |
| Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | |  |  |
| Lower | Upper | Df | Sig(2-tailed) |
| Pair 1 | Before training - After training | -1.200 | 2.781 | .879 | -3.189 | .789 | -1.365 | 9 | .206 |

4.Test of Hypothesis:

Ho: The training was not effective

H1: The training was effective (one tailed test)

Here, α = 0.05

2p = 0.206

P = 0.103

5.Decision:

Since p = 0.103 > α = 0.05, we accept Ho and H1 is rejected.

6.Conclusion:

Hence, we conclude that the training was not effective.

**Name: Bhumika Maharjan**

**Roll No: 22081027**

**Q.No: 6 solution:**

**1.Working Expression:**

t = dbar

Standard error

**2.Working Procedure:**

Analyze -> Compare mean -> Pared sample t-test -> Put before training in

variable 1 -> Put after training in variable 2 -> Option, fix 95% -> Continue -> Ok

**3.SPSS OUTPUT:**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Paired Samples Test** | | | | | | | | | |
|  | | Paired Differences | | | | | t |  |  |
| Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | |  |  |
| Lower | Upper | df | Sig(2-tailed) |
| Pair 1 | Sales of Laptop Before - Sales of laptop After | -4.125 | 1.553 | .549 | -5.423 | -2.827 | -7.514 | 7 | .000 |

**4.Test of Hypothesis:**

H0: The advertisement was not effective.

H1: The advertisement was effective.(one tailed)

Here, α = 0.05

2p= 0.000

P =0

**5.Decision:**

α = 0.05 > p=0, we reject H0 and accept H1.

**6.Conclusion:**

We conclude that, the advertisement was effective.

**Name: Bhumika Maharjan**

**Roll No: 22081027**

**Q.No 7: Solution:**

**Working Expression:**

t= (mean of first sample – mean of second sample) / standard error

**Working Procedure:**

Define variables in variable view -> put value manure 1 and manure 2 (string)

->go to analyze ->compare means –>independent sample t –test -> put values of manure in

test variables and manure in grouping variable -> go to options give level of confidence 95%

-> continue -> ok

**SPSS OUTPUT:**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Independent Samples Test** | | | | | | | | | | |
|  | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Value | Equal variances assumed | .756 | .399 | .571 | 14 | .577 | 3.000 | 5.251 | -8.262 | 14.262 |
| Equal variances not assumed |  |  | .601 | 13.797 | .558 | 3.000 | 4.994 | -7.726 | 13.726 |

**Setting of Hypothesis:**

Ho: There is no significant difference between the mean yields

H1: There is significant difference between the mean yields (two tailed test)

p- value = 0.558

α=0.05

**Decision:**

Since p = 0.558 > α = 0.05 , we accept Ho and H1 is rejected.

**Conclusion:**

There is no significant difference between the mean yields.

**Name: Bhumika Maharjan**

**Roll No: 22081027**

**Q.No: 8 Solution:**

**Working Expression:**

t= (mean of first sample – mean of second sample) / standard error

**Working Procedure:**

Define variables in variable view -> put value manure 1 and manure 2 (string)

->go to analyze ->compare means –>independent sample t –test -> put values of manure in

test variables and manure in grouping variable -> go to options give level of confidence 95%

-> continue -> ok

**SPSS OUTPUT:**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Independent Samples Test** | | | | | | | | | | |
|  | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Value | Equal variances assumed | 1.194 | .300 | 1.469 | 10 | .173 | 2.429 | 1.653 | -1.255 | 6.112 |
| Equal variances not assumed |  |  | 1.652 | 8.942 | .133 | 2.429 | 1.470 | -.899 | 5.756 |

**Setting of Hypothesis:**

Ho: There is no significant difference in the durability of RAM

H1: There is significant difference in the durability of RAM(two tailed)

p- value = 0.133

α=0.05

**Decision:**

Since p = 0.133 > α = 0.05 , we accept Ho and H1 is rejected.

**Conclusion:**

There is no significant difference in the durability of RAM

Name: Shrijal Maharjan

Roll No: 22081008

**Q.No 7: Solution:**

**Working Expression:**

t= (mean of first sample – mean of second sample) / standard error

**Working Procedure:**

Define variables in variable view -> put value manure 1 and manure 2 (string)

->go to analyze ->compare means –>independent sample t –test -> put values of manure in

test variables and manure in grouping variable -> go to options give level of confidence 95%

-> continue -> ok

**SPSS OUTPUT:**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Independent Samples Test** | | | | | | | | | | |
|  | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Value | Equal variances assumed | .756 | .399 | .571 | 14 | .577 | 3.000 | 5.251 | -8.262 | 14.262 |
| Equal variances not assumed |  |  | .601 | 13.797 | .558 | 3.000 | 4.994 | -7.726 | 13.726 |

**Setting of Hypothesis:**

Ho: There is no significant difference between the mean yields

H1: There is significant difference between the mean yields (two tailed test)

p- value = 0.558

α=0.05

**Decision:**

Since p = 0.558 > α = 0.05 , we accept Ho and H1 is rejected.

**Conclusion:**

There is no significant difference between the mean yields.

Name: Shrijal Maharjan

Roll No: 22081008

**Q.No: 8 Solution:**

**Working Expression:**

t= (mean of first sample – mean of second sample) / standard error

**Working Procedure:**

Define variables in variable view -> put value manure 1 and manure 2 (string)

->go to analyze ->compare means –>independent sample t –test -> put values of manure in

test variables and manure in grouping variable -> go to options give level of confidence 95%

-> continue -> ok

**SPSS OUTPUT:**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Independent Samples Test** | | | | | | | | | | |
|  | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Value | Equal variances assumed | 1.194 | .300 | 1.469 | 10 | .173 | 2.429 | 1.653 | -1.255 | 6.112 |
| Equal variances not assumed |  |  | 1.652 | 8.942 | .133 | 2.429 | 1.470 | -.899 | 5.756 |

**Setting of Hypothesis:**

Ho: There is no significant difference in the durability of RAM

H1: There is significant difference in the durability of RAM(two tailed)

p- value = 0.133

α=0.05

**Decision:**

Since p = 0.133 > α = 0.05 , we accept Ho and H1 is rejected.

**Conclusion:**

There is no significant difference in the durability of RAM

Name: Arabinda Sigdel

Roll No: 22081014

**Q.No 7: Solution:**

**Working Expression:**

t= (mean of first sample – mean of second sample) / standard error

**Working Procedure:**

Define variables in variable view -> put value manure 1 and manure 2 (string)

->go to analyze ->compare means –>independent sample t –test -> put values of manure in

test variables and manure in grouping variable -> go to options give level of confidence 95%

-> continue -> ok

**SPSS OUTPUT:**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Independent Samples Test** | | | | | | | | | | |
|  | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Value | Equal variances assumed | .756 | .399 | .571 | 14 | .577 | 3.000 | 5.251 | -8.262 | 14.262 |
| Equal variances not assumed |  |  | .601 | 13.797 | .558 | 3.000 | 4.994 | -7.726 | 13.726 |

**Setting of Hypothesis:**

Ho: There is no significant difference between the mean yields

H1: There is significant difference between the mean yields (two tailed test)

p- value = 0.558

α=0.05

**Decision:**

Since p = 0.558 > α = 0.05 , we accept Ho and H1 is rejected.

**Conclusion:**

There is no significant difference between the mean yields.

Name: Arabinda Sigdel

Roll No: 22081014

**Q.No: 8 Solution:**

**Working Expression:**

t= (mean of first sample – mean of second sample) / standard error

**Working Procedure:**

Define variables in variable view -> put value manure 1 and manure 2 (string)

->go to analyze ->compare means –>independent sample t –test -> put values of manure in

test variables and manure in grouping variable -> go to options give level of confidence 95%

-> continue -> ok

**SPSS OUTPUT:**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Independent Samples Test** | | | | | | | | | | |
|  | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
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| Value | Equal variances assumed | 1.194 | .300 | 1.469 | 10 | .173 | 2.429 | 1.653 | -1.255 | 6.112 |
| Equal variances not assumed |  |  | 1.652 | 8.942 | .133 | 2.429 | 1.470 | -.899 | 5.756 |

**Setting of Hypothesis:**

Ho: There is no significant difference in the durability of RAM

H1: There is significant difference in the durability of RAM(two tailed)

p- value = 0.133

α=0.05

**Decision:**

Since p = 0.133 > α = 0.05 , we accept Ho and H1 is rejected.

**Conclusion:**

There is no significant difference in the durability of RAM