I pledge to follow the Rules on Academic Honesty and understand that violations may lead to severe penalties. (Signature) //////

Section B:

Question 1:

1. We can use McNemar’s test, as the data are paired and dependent.

|  |  |  |  |
| --- | --- | --- | --- |
|  | B is effective | B is ineffective | Total |
| A is effective | 89 | 5 | 94 |
| A is ineffective | 16 | 90 | 106 |
| Total | 105 | 95 | 200 |

The results are statistically significant (p < 0.05), there is a significant difference between the 2 treatment.



|  |  |  |  |
| --- | --- | --- | --- |
|  | B is effective | B is ineffective | Total |
| A is effective | 52 | 4 | 56 |
| A is ineffective | 9 | 35 | 44 |
| Total | 61 | 39 | 100 |



The results are not statistically significant (p > 0.05), cannot conclude that there is a significant difference between the 2 treatment.

Question 2:

1. Wilcoxon Signed-Rank Test, as the data sets are from the same individual.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Person | (sc) | (rz) | Diff | Abs Diff | Ranks | Sign R |
| 1 | 79 | 84 | -5 | 5 | 9.5 | -9.5 |
| 2 | 112 | 99 | 13 | 13 | 15 | 15 |
| 3 | 103 | 92 | 11 | 11 | 13 | 13 |
| 4 | 104 | 103 | 1 | 1 | 2.5 | 2.5 |
| 5 | 94 | 94 | 0 | 0 | / | / |
| 6 | 106 | 106 | 0 | 0 | / | / |
| 7 | 103 | 97 | 6 | 6 | 11 | 11 |
| 8 | 97 | 108 | -11 | 11 | 13 | -13 |
| 9 | 88 | 77 | 11 | 11 | 13 | 13 |
| 10 | 113 | 94 | 19 | 19 | 16 | 16 |
| 11 | 98 | 97 | 1 | 1 | 2.5 | 2.5 |
| 12 | 103 | 103 | 0 | 0 | / | / |
| 13 | 105 | 107 | -2 | 2 | 5 | -5 |
| 14 | 117 | 120 | -3 | 3 | 6 | -6 |
| 15 | 94 | 94 | 0 | 0 | / | / |
| 16 | 88 | 87 | 1 | 1 | 2.5 | 2.5 |
| 17 | 101 | 97 | 4 | 4 | 7.5 | 7.5 |
| 18 | 98 | 93 | 5 | 5 | 9.5 | 9.5 |
| 19 | 91 | 87 | 4 | 4 | 7.5 | 7.5 |
| 20 | 105 | 104 | 1 | 1 | 2.5 | 2.5 |

The result is not statistically significant (p > 0.05), cannot conclude that there is significant difference between two measurements.