LAMPIRAN 15

UJI WILCOXON SIGN RANK TEST

**NPar Tests**

| **Descriptive Statistics** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | N | Mean | Std. Deviation | Minimum | Maximum |
| pretest | 10 | 1.1300E2 | 10.99495 | 100.00 | 132.00 |
| postest | 10 | 73.0000 | 7.70281 | 62.00 | 88.00 |

**Wilcoxon Signed Ranks Test**

| **Ranks** | | | | |
| --- | --- | --- | --- | --- |
|  |  | N | Mean Rank | Sum of Ranks |
| postest - pretest | Negative Ranks | 10a | 5.50 | 55.00 |
| Positive Ranks | 0b | .00 | .00 |
| Ties | 0c |  |  |
| Total | 10 |  |  |
| a. postest < pretest | |  |  |  |
| b. postest > pretest | |  |  |  |
| c. postest = pretest | |  |  |  |

| **Test Statisticsb** | |
| --- | --- |
|  | postest - pretest |
| Z | -2.807a |
| Asymp. Sig. (2-tailed) | .003 |
| a. Based on positive ranks. | |
| b. Wilcoxon Signed Ranks Test | |

**Sign Test**

| **Frequencies** | | |
| --- | --- | --- |
|  |  | N |
| postest - pretest | Negative Differencesa | 10 |
| Positive Differencesb | 0 |
| Tiesc | 0 |
| Total | 10 |
| a. postest < pretest | |  |
| b. postest > pretest | |  |
| c. postest = pretest | |  |

| **Test Statisticsb** | |
| --- | --- |
|  | postest - pretest |
| Exact Sig. (2-tailed) | .002a |
| a. Binomial distribution used. | |
| b. Sign Test |  |