**3.4 The Sign Test**

**N<=20**

1. Sun Coast Farms produces an orange juice product marketed under the name of Citrus Valley. A competitor of Sun Coast Farms produces an orange known as Tropical Orange. In a study of consumer preferences for the two brands, 12 individuals were given unmarked samples of each product. The brand each individual tasted to state a preference for one of the two brands. The purpose of the study is to determine whether consumer prefer one product over the other. Alpha=0.05.Use a one-sided test.

|  |  |  |
| --- | --- | --- |
| Individual | Brand Preference | Recorded Data |
| 1 | T | - |
| 2 | T | - |
| 3 | C | + |
| 4 | T | - |
| 5 | T | - |
| 6 | T | - |
| 7 | T | - |
| 8 | T | - |
| 9 | C | + |
| 10 | T | - |
| 11 | T | - |
| 12 | T | - |

**n>20**

2. The result of two tests is given below for seven graduate students. Has there been any change in the test? Alpha =0.05.

|  |  |  |
| --- | --- | --- |
| Students | Test 1 | Test 2 |
| 1 | 80 | 85 |
| 2 | 72 | 70 |
| 3 | 95 | 95 |
| 4 | 85 | 80 |
| 5 | 50 | 80 |
| 6 | 62 | 70 |
| 7 | 75 | 90 |

3. A poll taken during a recent presidential election campaign, asked 200 registered voters to rate the Democratic and Republican candidates.in terms of best overall foreign policy.

72 Democrat higher

103 Republican higher

25 no difference

Does the poll indicate a significant different between the two candidates? Use Alpha=0.05.