1. Thirteen randomly selected volunteer A,B,…,M are administered a pill designed to lower systolic blood pressure with the following results.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Volunteer | A | B | C | D | E | F | G | H | I | J | K | L | M |
| Before | 115 | 135 | 140 | 130 | 135 | 150 | 122 | 135 | 138 | 190 | 180 | 99 | 110 |
| After | 120 | 128 | 142 | 112 | 111 | 150 | 110 | 135 | 126 | 180 | 160 | 103 | 108 |

1. Is there evidence to suggest that the pill is not effective?
2. If a significance level of $α$=.15 is given, find the critical region of your test.
3. A certain university’s brochure claims that the average amount of money needed for boarding and lodging in the town for a single student is $75 per week. A random sample of nine single students from this university showed the following weekly expenditures:

75, 92, 80, 84, 73, 60, 84, 91, 78

Is there evidence to suggest that the university’s estimate is not correct? Assuming that the weekly expenditures are normally distributed, also apply the t-test to analyze the same data.