12. The following data represent growth rates of plates before and after a chemical treatment. Outline an appropriate statistical test of the theory that the chemical treatment reduces growth rate. What assumptions must you make, if any? Are the results significant at the 5% level?

|  |  |  |
| --- | --- | --- |
| Plant | Before  | after |
| 1 | 1 | 3 |
| 2 | 6 | 3 |
| 3 | 4 | 5 |
| 4 | 5 | 7 |
| 5 | 4 | 0 |
| 6 | 2 | 1 |
| 7 | 2 | 5 |

13. Compute the correlation coefficient between the before and after scores in problem 12 above.

14. Use a regression equation with the data of problem 12 to predict the after growth rate of a plate with a before rate of 3.