Assignment I (30 Marks)

A brochure inviting subscriptions for a new diet program states that the participants lose over **27** pounds in five weeks with a standard deviation of **3.4**. Data was collected from **65** participants who attended this diet program, the sample mean for weight loss was **25.5** pounds. Could the statement in the brochure be substantiated on the basis of these findings? Test at the **α = .01** level. Give detailed explanation with solution.

Assignment II (30 Marks)

From the following data find out whether there is any significant relationship between gender and preference of colour. Use Chi-square test and give detailed explanation with solution

|  |  |  |
| --- | --- | --- |
| Preference for Colour\Gender | Male | Female |
| Pink | 56 | 42 |
| Black | 67 | 39 |
| Yellow | 34 | 25 |

Assignment III (30 Marks)

The following data has mid term marks and end term marks of 9 students. Maximum marks for both mid term marks as well as end term marks is 100. Calculate regression line between mid term marks and end term marks using below dataset. Give detailed explanation with solution.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Student Roll No.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| **Mid Term Marks** | 67 | 59 | 73 | 63 | 89 | 78 | 64 | 28 | 89 |
| **End Term Marks** | 55 | 42 | 80 | 83 | 76 | 67 | 63 | 33 | 58 |