9. Three different IR Sensors were tested to determine differences in maximum detection range against a common target.

a. Using ANOVA, test the null hypothesis that there was no significant difference

between IR Sensor detection ranges at α = 0.05 level of significance.

**(Show all work.)**

|  |  |  |
| --- | --- | --- |
| IR SENSORS (aj) (1000 yds) | | |
| Sensor A (a1) | Sensor B (a2) | Sensor C (a3) |
| 12 | 9 | 7 |
| 9 | 11 | 9 |
| 11 | 8 | 6 |
| 0 | 8 | 6 |
| 32 | 36 | 28 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Source | df | Sums of Squares | Mean Squares | Fs | F = 0.05 | Significant /  Not Significant |
| IR Sensor |  |  |  |  |  |  |
| Exp. Error |  |  |  |  |  |  |
| Total |  |  |  |  |  |  |

b. Estimate the parameters**:** overall mean **(*u****)***,** and factors ***a1 , a2 , a3***