|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | X |  |  |  | X2 |  |  |  |
|  |  | Monday | Wednesday | Friday |  |  |  | Monday | Wednesday | Friday |  |  |  |
|  |  | 1.497 | 1.506 | 1.53 |  |  |  | 2.241009 | 2.268036 | 2.3409 |  |  |  |
|  |  | 1.492 | 1.513 | 1.528 |  |  |  | 2.226064 | 2.289169 | 2.334784 |  |  |  |
|  |  | 1.513 | 1.501 | 1.519 |  |  |  | 2.289169 | 2.253001 | 2.307361 |  |  |  |
|  |  | 1.498 | 1.511 | 1.519 |  |  |  | 2.244004 | 2.283121 | 2.307361 |  |  |  |
|  |  | 1.483 | 1.522 | 1.531 |  |  |  | 2.199289 | 2.316484 | 2.343961 |  |  |  |
|  |  | 1.511 | 1.5 | 1.514 |  |  |  | 2.283121 | 2.25 | 2.292196 |  |  |  |
|  |  | 1.508 | 1.51 | 1.515 |  |  |  | 2.274064 | 2.2801 | 2.295225 |  |  |  |
|  |  | 1.487 | 1.496 | 1.522 |  |  |  | 2.211169 | 2.238016 | 2.316484 |  |  |  |
|  |  | 1.485 | 1.508 | 1.517 |  |  |  | 2.205225 | 2.274064 | 2.301289 |  |  |  |
|  |  | 1.493 | 1.514 | 1.53 |  |  |  | 2.229049 | 2.292196 | 2.3409 |  |  |  |
|  | **Tc** | 14.967 | 15.081 | 15.225 | **(X)2** | 2049.645 |  |  |  | **X2** | 68.32681 |  |  |
|  | **nc** | 10 | 10 | 10 | **n** | 30 |  |  |  | **(X)2/n** | 68.32148 |  |  |
|  | **AVGc** | 1.497 | 1.508 | 1.523 | **(X)2/n** | **68.32148** |  |  |  | **SSTo** | **0.005327** |  |  |
|  | **T2c** | 224.0111 | 227.436561 | 231.8006 |  |  |  |  |  | **SST** | **0.003343** | 2 | 0.0016716 |
|  | **T2c / nc** | 22.40111 | 22.7436561 | 23.18006 | **(T2c / nc)** | 68.32483 |  |  |  | **SSE** | **0.001984** | 27 | 7.3463E-05 |
|  |  |  |  |  | **(X)2/n** | 68.32148 |  |  |  |  |  | F | 22.7543232 |
|  |  |  |  |  | **SST** | **0.003343** |  |  |  |  |  | F-test | 3.35413083 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Monday | Wednesday | Friday |  | TOTALS |  |  |
|  |  |  | X | X2 | X | X2 | X | X2 |  |  |  |  |
|  |  |  | 1.497 | 2.241009 | 1.506 | 2.268036 | 1.53 | 2.3409 |  |  |  |  |
|  |  |  | 1.492 | 2.226064 | 1.513 | 2.289169 | 1.528 | 2.334784 |  |  |  |  |
|  |  |  | 1.513 | 2.289169 | 1.501 | 2.253001 | 1.519 | 2.307361 |  |  |  |  |
|  |  |  | 1.498 | 2.244004 | 1.511 | 2.283121 | 1.519 | 2.307361 |  |  |  |  |
|  |  |  | 1.483 | 2.199289 | 1.522 | 2.316484 | 1.531 | 2.343961 |  |  |  |  |
|  |  |  | 1.511 | 2.283121 | 1.5 | 2.25 | 1.514 | 2.292196 |  |  |  |  |
|  |  |  | 1.508 | 2.274064 | 1.51 | 2.2801 | 1.515 | 2.295225 |  |  |  |  |
|  |  |  | 1.487 | 2.211169 | 1.496 | 2.238016 | 1.522 | 2.316484 |  |  |  |  |
|  |  |  | 1.485 | 2.205225 | 1.508 | 2.274064 | 1.517 | 2.301289 |  |  |  |  |
|  |  |  | 1.493 | 2.229049 | 1.514 | 2.292196 | 1.53 | 2.3409 |  |  |  |  |
|  |  | **Tc** | 14.967 |   | 15.081 |   | 15.225 |   |  | 45.273 | **(X)2** |  |
|  |  | **nc** | 10 |   | 10 |   | 10 |   |  | 30 | **n** |  |
|  |  | **T2c / nc** | 22.40111 |   | 22.7436561 |   | 23.18006 |   |  | 68.32483 | **(T2c / nc)** |  |
|  |  | **X2** |   | 22.40216 |   | 22.744187 |   | 23.18046 |  | 68.32681 | **X2** |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | 68.32681 | **X2** |  |
|  |  |  |  |  |  |  |  |  |  | 68.32148 | **(X)2/n** |  |
|  |  |  |  |  |  |  |  |  |  | 0.005327 | **SSTo** |  |
|  |  |  |  |  |  |  |  |  |  | 68.32483 | **(T2c / nc)** |  |
|  |  |  |  |  |  |  |  |  |  | 68.32148 | **(X)2/n** |  |
|  |  |  |  |  |  |  | MST | 0.001672 | 2 | 0.003343 | **SST** |  |
|  |  |  |  |  |  |  | MSE | 7.35E-05 | 27 | 0.001983 | **SSE** |  |
|  |  |  |  |  |  |  | F | 22.75432 |  |  |  |  |
|  |  |  |  |  |  |  | F-test | 3.354131 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | ANOVA TABLE | **STANDARD FORMAT** |  |  |  |  |  |  |  |  |
|  |  | *Source of Variation* | *SS* | *df* | *MS* | *F* | *F crit* |  |  |  |  |  |
|  |  | Treatments | SST | k - 1 | SST/(k-1) = MST | MST/MSE | F(α, k-1, n-k) |  |  |  |  |  |
|  |  | Error | SSE | n - k | SSE/(n-k)=MSE |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Total | SSTo | n - 1 |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | **EXAMPLE DATA** |  |  |  |  |  |  |  |  |
|  |  | ANOVA TABLE |  |  |  | 0.05 |  |  |  |  |  |
|  |  | *Source of Variation* | *SS* | *df* | *MS* | *F* | *F crit* |  |  |  |  |  |
|  |  | Treatments | #REF! | 2 | #REF! | #REF! | 3.354131 |  |  |  |  |  |
|  |  | Error | #REF! | 27 | #REF! |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Total | #REF! | 29 |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Monday | Wednesday | Friday |  |  |  |  |  |  |  |  |  |
| 1.497 | 1.506 | 1.53 |  | Anova: Single Factor |  |  |  |  |  |  |
| 1.492 | 1.513 | 1.528 |  |  |  |  |  |  |  |  |  |
| 1.513 | 1.501 | 1.519 |  | SUMMARY |  |  |  |  |  |  |  |
| 1.498 | 1.511 | 1.519 |  | *Groups* | *Count* | *Sum* | *Average* | *Variance* |  |  |  |
| 1.483 | 1.522 | 1.531 |  | Monday | 10 | 14.967 | 1.4967 | 0.000117 |  |  |  |
| 1.511 | 1.5 | 1.514 |  | Wednesday | 10 | 15.081 | 1.5081 | 5.9E-05 |  |  |  |
| 1.508 | 1.51 | 1.515 |  | Friday | 10 | 15.225 | 1.5225 | 4.43E-05 |  |  |  |
| 1.487 | 1.496 | 1.522 |  |  |  |  |  |  |  |  |  |
| 1.485 | 1.508 | 1.517 |  |  |  |  |  |  |  |  |  |
| 1.493 | 1.514 | 1.53 |  | ANOVA |  |  |  |  |  |  |  |
|  |  |  |  | *Source of Variation* | *SS* | *df* | *MS* | *F* | *P-value* | *F crit* |  |
|  |  |  |  | Between Groups | 0.003343 | 2 | 0.001672 | 22.75432 | 1.61E-06 | 3.354131 |  |
|  |  |  |  | Within Groups | 0.001983 | 27 | 7.35E-05 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Total | 0.005327 | 29 |   |   |   |   |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |