Lists all the computation results. For details and outcomes, kindly refer to the notebook. The notebook can be viewed here as well.

3.

Calculated Z-square statistic value = 10.260900000000017
Chi-Squared Distribution Percentage Points for:
Degrees of Freedom = p = 2 with alpha = 0.05 is 5.991

6.

(a)
Computed T square Statistic = 85.33270239095
Critical T square value = 36.56145156171773
Computed T square statistic is >= Critical T square value: True

(b)
Constructing 95 % Simultaneous Confidence intervals:

Range for mu suffix 1 = (21.38216673123666, 50.79965145058153)
Range for mu suffix 2 = (13.170678931334397, 37.9202301595747)
Range for mu suffix 3 = (19.888003712834678, 48.29381446898351)
Range for mu suffix 4 = (12.823053128113768, 41.72240141734078)
Range for mu suffix 5 = (16.81671024417858, 44.63783521036687)

(c)
Constructing 95 % Bonferroni Confidence intervals:

Range for mu suffix 1 = (28.38145846944604, 43.80035971237214)
Range for mu suffix 2 = (19.059330904434496, 32.0315781864746)
Range for mu suffix 3 = (26.64658822267579, 41.5352299591424)
Range for mu suffix 4 = (19.699064848701376, 34.84638969675317)
Range for mu suffix 5 = (23.436180670740228, 38.018364783805225)

(d)
Testing with a Bonferroni Critical Value:

Bonferroni Critical Value = 3.169272667175838

Absolute value t for case 1 = 2.5039075607189867
t suffix 1 is >= Bonferroni Critical Value: False

Absolute value t for case 2 = 0.2665219286236194

t suffix 2 is >= Bonferroni Critical Value: False

Absolute value t for case 3 = 2.5156788157740264
t suffix 3 is >= Bonferroni Critical Value: False

Absolute value t for case 4 = 0.951044821135667
t suffix 4 is >= Bonferroni Critical Value: False

Absolute value t for case 5 = 0.316128991138271
t suffix 5 is >= Bonferroni Critical Value: False

8.

(a)
Computed T square Statistic = 133.48730309987775

Critical T square value = 11.534832768836228
Computed T square statistic is >= Critical T square value: True

(b)
Discriminant function coefficient vector a =
[[0.34524895]
 [-0.13038778]
 [-0.1064338]
 [-0.14335331]]

(c)
Computed value of created function with vector a:
133.48730309987778

9.

(a)
Constructing 95 % Simultaneous Confidence intervals:

Range for (mu_1 - mu_2) suffix 1 = (1.8871686974513775, 27.960199723601256)
Range for (mu_1 - mu_2) suffix 2 = (-44.61363715638602, -2.8810996857193167)
Range for (mu_1 - mu_2) suffix 3 = (-31.666473058828053, -7.996684835908747)
Range for (mu_1 - mu_2) suffix 4 = (-38.99736409588562, -7.607899062009119)

(b)
Constructing 95 % Bonferroni Confidence intervals:

Range for (mu_1 - mu_2) suffix 1 = (4.844976313449974, 25.00239210760266)
Range for (mu_1 - mu_2) suffix 2 = (-39.87936529356025, -7.615371548545092)
Range for (mu_1 - mu_2) suffix 3 = (-28.981296954653295, -10.681860940083501)
Range for (mu_1 - mu_2) suffix 4 = (-35.43644328670912, -11.168819871185617)

10.

(a)
- Dimensions of C = (3, 4)
- Rank(C) = 3
- k = 3

Computed T square statistic = 132.686326667889
Critical T square value = 9.115280304816977
Computer T square statistic >= Critical Value: True

(b)
- Dimensions of C = (2, 4)
- Rank(C) = 2
- k = 2

Computed T square statistic = 90.4257696414666
Critical T square value = 6.699972962629554
Computer T square statistic >= Critical Value: True