```
NPAR TESTS
 /FRIEDMAN=Cartesian Cartesian_ColouredPolar Polar_Coloured
 /STATISTICS QUARTILES
 /MISSING LISTWISE.
```

NPar Tests

Notes

Output Created		05-SEP-2018 20:38:18
Comments		
Input	Active Dataset	DataSet0
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	42
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for all tests are based on cases with no missing data for any variables used.
Syntax		NPAR TESTS /FRIEDMAN=Cartesian Cartesian_Coloured Polar Polar_Coloured /STATISTICS QUARTILES /MISSING LISTWISE.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.01
	Number of Cases Allowed[a]	87381

a. Based on availability of workspace memory.

Descriptive Statistics

		Percentiles		
	N	25th	50th (Median)	75th
Cartesian	42	2.0000	2.0000	3.0000
Cartesian_Coloured	42	4.0000	4.0000	5.0000
Polar	42	1.0000	1.0000	2.0000
Polar_Coloured	42	3.7500	4.0000	5.0000

Friedman Test

Ranks

	Mean Rank
Cartesian	1.83
Cartesian_Coloured	3.46
Polar	1.35
Polar_Coloured	3.36

Test Statistics^a

N	42
Chi-Square	90.860
df	3
Asymp. Sig.	.000

a. Friedman Test

```
 NPAR TESTS
  /WILCOXON=Cartesian Cartesian Cartesian Cartesian_ColouredCartesian_Coloure
d Polar WITH Cartesian_ColouredPolar Polar_ColouredPolar Polar_ColouredPola
r_Coloured (PAIRED)
  /STATISTICS QUARTILES
  /MISSING ANALYSIS.
```

NPar Tests

Notes

Output Created		05-SEP-2018 20:38:28
Comments		
Input	Active Dataset	DataSet0
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	42
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each test are based on all cases with valid data for the variable(s) used in that test.

Syntax		NPAR TESTS
		  /WILCOXON=Cartesian Cartesian Cartesian Cartesian_Coloured Cartesian_Coloured Polar WITH Cartesian_Coloured Polar Polar_Coloured Polar Polar_Coloured Polar_Coloured (PAIRED)
		  /STATISTICS QUARTILES
		  /MISSING ANALYSIS.

Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.01
	Number of Cases Allowed[a]	87381

a. Based on availability of workspace memory.

Descriptive Statistics

		Percentiles		
	N	25th	50th (Median)	75th
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Polar_Coloured	42	3.7500	4.0000	5.0000

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
Cartesian_Coloured - Cartesian	Negative Ranks	1[a]	7.50	7.50
	Positive Ranks	41[b]	21.84	895.50
	Ties	0[c]		
	Total	42		
Polar - Cartesian	Negative Ranks	27[d]	17.85	482.00
	Positive Ranks	8[e]	18.50	148.00
	Ties	7[f]		
	Total	42		
Polar_Coloured - Cartesian	Negative Ranks	2[g]	7.50	15.00
	Positive Ranks	37[h]	20.68	765.00
	Ties	3[i]		
	Total	42		
Polar - Cartesian_Coloured	Negative Ranks	39[j]	21.92	855.00
	Positive Ranks	2[k]	3.00	6.00
	Ties	1[l]		
	Total	42		
Polar_Coloured - Cartesian_Coloured	Negative Ranks	20[m]	17.90	358.00
	Positive Ranks	16[n]	19.25	308.00
	Ties	6[o]		
	Total	42		
Polar_Coloured - Polar	Negative Ranks	0[p]	.00	.00
	Positive Ranks	41[q]	21.00	861.00
	Ties	1[r]		
	Total	42		

a. Cartesian_Coloured < Cartesian

b. Cartesian_Coloured > Cartesian

c. Cartesian_Coloured = Cartesian

d. Polar < Cartesian

e. Polar > Cartesian

f. Polar = Cartesian

g. Polar_Coloured < Cartesian

h. Polar_Coloured > Cartesian

i. Polar_Coloured = Cartesian

j. Polar < Cartesian_Coloured

k. Polar > Cartesian_Coloured

l. Polar = Cartesian_Coloured

m. Polar_Coloured < Cartesian_Coloured

n. Polar_Coloured < Cartesian_Coloured

n. Polar_Coloured > Cartesian_Coloured

o. Polar_Coloured = Cartesian_Coloured

p. Polar_Coloured < Polar

q. Polar_Coloured > Polar

r. Polar_Coloured = Polar

Test Statistics[a]

	Cartesian_Coloured - Cartesian	Polar - Cartesian	Polar_Coloured - Cartesian	Polar - Cartesian_Coloured	Polar_Coloured - Cartesian_Coloured
Z	-5.629[b]	-2.817[c]	-5.288[b]	-5.573[c]	-.435[c]
Asymp. Sig. (2-tailed)	.000	.005	.000	.000	.664

Test Statistics[a]

	Polar_Coloured - Polar
Z	-5.626[b]
Asymp. Sig. (2-tailed)	.000

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

c. Based on positive ranks.