

# Comparison of means of populations with one-way ANOVA

Run *anova.py* to start the GUI application.

ANOVA

Groups

Traditional: 4, 1, 3, 1, 2, 4, 2, 3, 0, 3, 3, 4, 5, 6, 5, 2

Modern: 6, 2, 3, 5, 3, 4, 1, 4, 2, 4, 5, 3

Reactionist: 6, 5, 7, 6, 7, 9, 8, 8

$\alpha = 0.0500$  Calculate

Load single group from CSV

Delete Group

Add Group

Load all groups from CSV

ANOVA

Groups

Traditional: 4, 1, 3, 1, 2, 4, 2, 3, 0, 3, 3, 4, 5, 6, 5, 2

Modern: 6, 2, 3, 5, 3, 4, 1, 4, 2, 4, 5, 3

Reactionist: 6, 5, 7, 6, 7, 9, 8, 8

$\alpha = 0.0500$  Calculate

Result

Group Parameters

	n	$\bar{x}$	$\sigma$	$\Sigma(x - \bar{x})^2$
1	16	3.00	0.40	40.00
2	12	3.50	0.40	23.00
3	8	7.00	0.43	12.00

Anova

	df	SS	MS
Between Groups	2	90.89	45.44
Within Groups	33	75.00	2.27
Total	35	165.89	-

Test

F-ratio = 19.9956  $F_\alpha = 3.2849$

F-ratio >  $F_\alpha$ .  $H_0$  is rejected. Means are not equal.

Student marks, slide 144