

10.8: One-Way ANOVA Calculations Chart

Phase 1: Calculations For Each Group						
Find the five statistics that focus on calculations for each group, one by one.*		Sample Sizes	Means	Sum of Squares Within	Standard Deviations	Sum of Squares Between
	Group 1	$n_1 =$	$\bar{X}_1 =$	$SS_{w1} =$	$s_1 =$	$SS_{b1} =$
	Group 2	$n_2 =$	$\bar{X}_2 =$	$SS_{w2} =$	$s_2 =$	$SS_{b2} =$
	Group 3	$n_3 =$	$\bar{X}_3 =$	$SS_{w3} =$	$s_3 =$	$SS_{b3} =$
Phase 2: Summary Calculations						
Find the five statistics that use data across groups.	Summary Components	$N =$	$\bar{X}_{\text{grand}} =$	$SS_w =$	$k =$	$SS_b =$
Find both forms of degrees of freedom.	Degrees of Freedom			$df_w =$		$df_b =$
Phase 3: ANOVA (omnibus) Calculations						
Plug the parts into the ANOVA formula and find F .	Between	$SS_b =$	$df_b =$	$MSS_b =$	$F =$	Critical Value =
	Within	$SS_w =$	$df_w =$	$MSS_w =$	Is the result significant?	
Phase 4: Post-ANOVA Calculations						
If ANOVA is significant, complete follow-up calculations.	Follow-Up	Formula	How to use and interpret it:			
	Effect Size	$\eta^2 = \frac{SS_b}{SS_T}$				
	Post-Hoc (Tukey)	$HSD = q\sqrt{\frac{MS_w}{n}}$				

*Note: The first section shows room for three groups, however, rows can be added to accommodate the data when using ANOVA to compare more than three groups.

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