

9.6: Chapter 9 Formula Review

9.3 The F -Distribution and the F -Ratio

$$MS_{\text{Between}} = \frac{SS_{\text{Between}}}{df_{\text{Between}}} = \frac{n_1(\bar{x}_1 - \bar{x})^2 + \cdots + n_g(\bar{x}_g - \bar{x})^2}{g - 1}$$
$$MS_{\text{Within}} = \frac{SS_{\text{Within}}}{df_{\text{Within}}} = \frac{(n_1 - 1)s_1^2 + \cdots + (n_g - 1)s_g^2}{n - g}$$
$$F_{\text{obs}} = \frac{MS_{\text{between}}}{MS_{\text{within}}}$$

- n_g = the size of the g th group
 - \bar{x}_g = the mean of the values in the g th group
 - \bar{x} = the total mean of all observations
 - g = the number of groups
 - n = the total number of observations combined
 - s_g^2 = the variance of the values in the g th group
-

9.6: Chapter 9 Formula Review is shared under a [not declared](#) license and was authored, remixed, and/or curated by LibreTexts.