

TABLE 12.8

The Steps Used to Compute a One-Way Between-Subjects ANOVA

*Steps for Computing a One-Way Between-Subjects ANOVA**Terminology**Statement**Meaning***Step 1: State the hypotheses.**

Null hypothesis

$$\sigma_{\mu}^2 = 0$$

Population means do not vary.

Alternative hypothesis

$$\sigma_{\mu}^2 > 0$$

Population means do vary.

Step 2: Set the criteria for a decision.

Degrees of freedom between groups

$$df_{BG} = k - 1$$

The number of groups minus 1

Degrees of freedom error

$$df_E = N - k$$

The number of total participants minus the number of groups

Degrees of freedom total

$$df_T = N - 1$$

The number of total participants minus 1

Step 3: Compute test statistic.**STAGE 1**

Groups

$$k$$

The number of groups or levels of a factor

Participants

$$n, N$$

The number of participants per group (n) and overall (N)

Grand total

$$\Sigma X_T$$

The sum of all scores in a study