Question

Which of the following is false for interpreting a significant interaction between **gender** and **school**?

- *a.* The effect of **gender** depends on the levels of **school**.
- *b.* The effect of **school** depends on the levels of **gender**.
- *c.* The difference between levels of **gender** is not the same across schools.
- *d.* The difference between levels of **school** is not the same across genders.
- *e.* The interaction is not intuitive to interpret, so you can ignore it.

Correct.
Options a through d refer to the definition of interactions. When an interaction is significant, the statement can be written as **gender** is interacting with **school** or **school** is interacting with **gender**. Option **e** is the correct answer because significant interactions should not be ignored based on nonintuitive interpretations.

Question

The significant interaction between **brand** and **technician** indicates which of the following? Select all that apply.

- *a.* The dfiferences in the average repair time between the technicians differ across different brands.
- *b.* The differences in the average repair time between the brands differs across different technicians.
- *c.* The significant interaction is not something that you should worry about.

Correct.
The significant interaction between the two factors, **brand** and **technician**, indicates that the effect of **brand** on the response variable **time** (repair time) depends on the levels of the other factor, **technician**, and vice versa.

Question

Assume that the CLASS statement reads as follows: CLASS school gender. Which of the following statements is correct for comparing **reading3** values for male students at Cottonwood and Pine?

- *a.* LSMESTIMATE school*gender 1 0 0 -1;

- *b.* LSMESTIMATE school*gender 0 1 0 0 0 0 0 -1;
- *c.* LSMESTIMATE school 1 0 0 -1 gender 0 1;

Correct.
This hypothesis refers to gender as male and only two schools (Cottonwood and Pine), and does not mention gender as female and the remaining two schools (Dogwood and Maple). Hence, in the body of the table, you fill in zero for any combination of **gender** by **school** that is not involved in the hypothesis of interest.

The mathematical equation resembles this: $\mu_{12} - \mu_{42} = 0$, and the coefficients are 0 1 0 0 0 0 0 -1.

Question

You always examine plots, such as a probability plot, to evaluate normality because the normality test might be sensitive to sample size.

- *a.* true
- *b.* false

Correct.
All of the normality tests are dependent on sample size.