

## CHECK-IN

**11.1 Describing a multiple regression.** To minimize the negative impact of math anxiety on achievement in a research design course, a group of investigators implemented a series of feedback sessions, in which the teacher went over the small-group assignments and discussed the most frequently committed errors.<sup>2</sup> At the end of the course, data from 166 students were obtained. The investigators studied how students' final exam scores were explained by math course anxiety, math test anxiety, numerical task anxiety, enjoyment, self-confidence, motivation, and perceived usefulness of the feedback sessions.

- What is the response variable?
- What are the cases, and what is  $n$ , the number of cases?
- What is  $p$ , the number of explanatory variables?
- What are the explanatory variables?

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**11.2 Understanding the fitted regression line.** The fitted regression equation for a multiple regression is

$$\hat{y} = -10.8 + 3.2x_1 + 2.8x_2$$

- If  $x_1 = 4$  and  $x_2 = 2$ , what is the predicted value of  $y$ ?
- For the answer to part (a) to be valid, is it necessary that the values  $x_1 = 4$  and  $x_2 = 2$  correspond to a case in the data set? Explain why or why not.
- If you hold  $x_1$  at a fixed value, what is the effect of an increase of three units of  $x_2$  on the predicted value of  $y$ ?