This quiz is based on Sections 5.1 through 5.2 in the Utts and Heckard textbook.

**Questions 1–3:** Which of the following is not a tool used to describe, picture, or quantify the relationship between two quantitative variables?

(a) A scatterplot  
(b) A correlation  
(c) A chi-square goodness-of-fit test  
(d) A regression equation

**Questions 4–6:** Which of the following is generally true of a scatterplot?

(a) The explanatory (independent) variable goes on the x-axis; the response (dependent) variable goes on the y-axis.  
(b) The explanatory (independent) variable goes on the y-axis; the response (dependent) variable goes on the x-axis.  
(c) The variables on the x- and y-axes, respectively, are in alphabetical order.  
(d) There is no preference about which variable goes on which axis.

**Questions 7–9:** Which of the following is true of two variables that have a positive association?

(a) Both variables take only positive values.  
(b) As the values of one variable increase, the values of the other variable tend to remain constant.  
(c) As the values of one variable increase, the values of the other variable tend to decrease.  
(d) As the values of one variable increase, the values of the other variable tend to increase too.

**Questions 10–12:** Which of the following tools makes it easy to spot an outlier?

(a) A scatterplot  
(b) A correlation  
(c) A chi-square goodness-of-fit test  
(d) A regression equation
Questions 13–15: Which of the following tools allows the user to predict the value of \( y \) for an individual, given that individual’s \( x \) value?

(a) A chi-square test of independence  
(b) A correlation  
(c) A chi-square goodness-of-fit test  
(d) A regression equation

Questions 16–18: What is true about the slope of a regression line for two variables with a negative linear relationship?

(a) The slope is negative.  
(b) The slope is positive.  
(c) The slope is zero.  
(d) The slope changes from positive to negative as the \( x \) values get larger.

Questions 19–21: What do we call the risky practice of using a regression equation to predict values outside the range of the observed data?

(a) The Hawthorne effect  
(b) Correlation  
(c) Extrapolation  
(d) Prediction error

Questions 22–24: What criterion is usually the basis for estimating the equation of a regression line?

(a) The correlation criterion  
(b) The residual criterion  
(c) The prediction criterion  
(d) The least squares criterion