

Chapter 15 Practice Quizzes

1. A straight line that is drawn through a scatterplot to summarize the relationship between explanatory and response variables is called:

- a. Correlation line
- b. Standard deviation line
- c. Regression line
- d. None of the choices are correct.

2. A correlation of either _____ has an r^2 value about halfway between 0 and 1.

- a. -0.3 or +0.3
- b. -0.5 or +0.5
- c. -0.7 or +0.7
- d. -1 or +1

3. The best evidence of causation comes from:

- a. Surveys
- b. Observational studies
- c. Experiments
- d. None of the choices are correct.

4. True or False: We can use the regression line to predict a response.

- a. True. Prediction is based upon the regression line and works best when the model fits the data closely.

- b. True. Prediction is based upon the regression line and works even if the data does not have strong patterns.
- c. True. Prediction is a risk-free way to use the regression line to predict a response outside the data set.
- d. False. Regression lines cannot be used to predict a response.

5. A variable that may cause changes in the relationship between the response and the explanatory variable is called:

- a. Direct causation
- b. Common response
- c. Lurking variable
- d. None of the choices are correct.

6. What is the explanatory variable and the response variable in the situation: Temperature and the number of chirps a cricket makes per minute?

- a. Explanatory: temperature Response: number of chirps
- b. Explanatory: number of chirps Response: temperature
- c. Explanatory: temperature Response: time (minutes)
- d. Explanatory: time (minutes) Response: temperature

7. The Aimco Job Placement Agency gathers data from a survey about the number of years of college and their clients' starting salaries. The results were tabulated and a least-squares regression line was generated. The regression equation $y = 8.2 + 11.44x$ represents the relationship between number of years of college experience (x) and starting salary (y) (in thousands). The r^2 value is 0.888.

Use the regression equation to determine the starting salary of someone who has 6 years of college experience.

- a. 68.64 thousand dollars

- b. 76.84 thousand dollars
- c. 8.2 thousand dollars
- d. 11.44 thousand dollars

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The slope of the graph states:

- a. For each year of experience the salary increases 11.44 thousand each year
- b. For each year of experience the salary increases 8.2 thousand each year
- c. For each thousand earned as starting salary, the years of experience increase by 11.44
- d. For each thousand earned as starting salary, the years of experience increase by 8.2.

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What would be the starting salary if you had no college experience?

- a. 8.2 thousand dollars
- b. 11.44 thousand dollars
- c. 0 dollars
- d. Cannot be determined from the information given.

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The r^2 value tells us that:

- a. It is a weak correlation.
- b. It is a negative correlation.
- c. Approximately 89% of the observed variation is explained by the straight-line relationship between x and y .
- d. There is extreme variation observed in starting salaries.