Class Exercises - Correlation and Association - Fall 2015 - AP Statistics - Tytell

Name	Period	Date: 9/16/2015

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Determine whether the scatterplot shows little or no association, a negative association, a positive association, a linear association, a moderately strong association, or a very strong association (multiple associations are possible).
1)
1)







2) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Several scatterplots are given with calculated correlations. Which is which?



a) -0.956, b) -0.061, c) 0.716, d) 0.961

A) 1c, 2d, 3b, 4a B) 1a, 2c, 3b, 4d C) 1a, 2c, 3d, 4b D) 1d, 2b, 3a, 4c E) 1b, 2d, 3c, 4d

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Find the correlation.

4) Two different tests are designed to measure employee productivity and dexterity. Several employees are randomly selected and tested with these results.

4)
-	/

3)

Productivity	Dexterity
23	49
25	53
28	59
21	42
21	47
25	53
26	55
30	63
34	67
36	75

Solve the problem.

- 5) A science instructor assigns a group of students to investigate the linear relationship between the pH of the water of a river and its water's hardness (measured in grains). Some students wrote these conclusions: "My correlation of -0.94 shows that there is almost no association between pH of the water and water's hardness." Is the interpretation of the correlation appropriate?
- 6) Soda is often considered unhealthy because its content is high in both caffeine and refined sugar. But are the two related? Caffeine and refined sugar contents (in milligrams) of 12 ounces of several brands of soda are shown on the following scatterplot. The correlation between caffeine and refined sugar is 0.145. Describe the association.



7) Data collected from students in Statistics classes included their heights (in inches) and weights (in pounds). For the students' heights and weights, the correlation is 0.636. Suppose the variable weight is recorded in kilograms rather than in pounds. What will be the correlation?



Find the lurking variable.

8) A reporter studied the causes of a fire to a house, and established thanks to a scatterplot a strong correlation between the damages (in dollars) and the number of firefighters at the scene. Find the lurking variable, if there is one.

8) _____

5)

6) _____

7) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Provide an appropriate response.

9) All but one of the statements below contain a mistake. Which one could be true?

- A) The correlation between gender and age is -0.171.
- B) The correlation between height and weight is 0.568 inches per pound.
- C) The correlation between weight and length of foot is 0.488.
- D) If the correlation between blood alcohol level and reaction time is 0.73, then the correlation between reaction time and blood alcohol level is -0.73.
- E) The correlation between the breed of a dog and its weight is 0.435.

Answer Key Testname: UNTITLED1

- 1) Negative association, linear association
- 2) Little or no association
- 3) C
- 4) 0.986
- 5) No: a correlation of -0.94 shows a strong relation in a negative direction.
- 6) No evidence of relation
- 7) 0.636
- 8) Size of the blaze
- 9) C