Linear Regression & Correlation · 1

The least-squares line $\hat{y} = -40 + 1.6x$ predicts y = number of lemonade cups sold from x = daily high temperature in °F. Predict y when x = 86.

Linear Regression & Correlation · 2

The least-squares line $\hat{y} = 22 + 1.2x$ predicts y = free throws made out of 50 from x = hours of practice per week. One data point has x = 10 and y = 33.5. Find its residual.

Linear Regression & Correlation · 3

The least-squares line $\hat{y} = 640 - 15x$ predicts y = number of tickets sold from x = ticket price in dollars. One data point has x = 12 and y = 462. Find its residual.

Linear Regression & Correlation · 4

The least-squares line $\hat{y} = -12 + 0.8x$ predicts y = number of lemonade cups sold from x = daily high temperature in °F. Predict y when x = 68.

Linear Regression & Correlation · 5

The least-squares line $\hat{y} = 55 + 4.2x$ predicts y = test score from x = hours studied. One data point has x = 7 and y = 81.4. Find its residual.

Linear Regression & Correlation · 6

A data set has correlation r = 0.88. Which best describes the correlation? (A) strong positive (B) weak positive (C) strong negative (D) weak negative (E) no correlation

Linear Regression & Correlation · 7

A least-squares line has correlation r = -0.9. What percent of the variation in y is explained by the linear relationship with x?

Linear Regression & Correlation · 8

The least-squares line $\hat{y} = 5 + 2.8x$ predicts y = commute time in minutes from x = distance from school in miles. What does the y-intercept 5 mean? (A) When the commute time is 0, x is 5. (B) When x is 0, the predicted commute time is 5 minutes. (C) For each additional mile, the predicted commute time increases by 5 minutes. (D) The commute time is always at least 5 minutes.

Linear Regression & Correlation · 2

ANSWER

-0.5

Linear Regression & Correlation · 1

ANSWER

97.6

Linear Regression & Correlation · 4

ANSWER

42.4

Linear Regression & Correlation · 3

ANSWER

2

Linear Regression & Correlation · 6

ANSWER

A

Linear Regression & Correlation · 5

ANSWER

-3

Linear Regression & Correlation · 8

ANSWER

B

Linear Regression & Correlation · 7

ANSWER

81%

Linear Regression & Correlation · 9

The least-squares line $\hat{y} = 18 + 1.2x$ predicts y = free throws made out of 50 from x = hours of practice per week. Predict y when x = 9.

Linear Regression & Correlation · 10

The least-squares line $\hat{y} = 18 + 1.8x$ predicts y = free throws made out of 50 from x = hours of practice per week. One data point has x = 3 and y = 22. Find its residual.

Linear Regression & Correlation · 11

A data set has correlation r = -0.03. Which best describes the correlation? (A) strong positive (B) weak positive (C) strong negative (D) weak negative (E) no correlation

Linear Regression & Correlation · 12

A least-squares line has correlation r = 0.7. What percent of the variation in y is explained by the linear relationship with x?

Linear Regression & Correlation · 13

A data set has correlation r = -0.01. Which best describes the correlation? (A) strong positive (B) weak positive (C) strong negative (D) weak negative (E) no correlation

Linear Regression & Correlation · 14

The least-squares line $\hat{y} = 28 - 2.4x$ predicts y = value of the car in thousands of dollars from x = age of a car in years. Predict y when x = 9.

Linear Regression & Correlation · 15

The least-squares line $\hat{y} = 30.2 - 1.8x$ predicts y = value of the car in thousands of dollars from x = age of a car in years. One data point has x = 1 and y = 30.5. Find its residual.

Linear Regression & Correlation · 16

The least-squares line $\hat{y} = 28 - 2.4x$ predicts y = value of the car in thousands of dollars from x = age of a car in years. Predict y when x = 2.

Linear Regression & Correlation · 10

ANSWER

-1.4

Linear Regression & Correlation · 9

ANSWER

28.8

Linear Regression & Correlation · 12

ANSWER

49%

Linear Regression & Correlation · 11

ANSWER

E

Linear Regression & Correlation · 14

ANSWER

6.4

Linear Regression & Correlation · 13

ANSWER

E

Linear Regression & Correlation · 16

ANSWER

23.2

Linear Regression & Correlation · 15

ANSWER

2.1

Linear Regression & Correlation · 17

The least-squares line ŷ = 900 - 15x predicts y = number of tickets sold from x = ticket price in dollars. Predict y when x = 33.

Linear Regression & Correlation · 18

The least-squares line ŷ = 24.5 - 2.4x predicts y = value of the car in thousands of dollars from x = age of a car in years. One data point has x = 6 and y = 8.3. Find its residual.

Linear Regression & Correlation · 19

The least-squares line ŷ = 20.5 + 1.8x predicts y = free throws made out of 50 from x = hours of practice per week. Predict y when x = 9.

Linear Regression & Correlation · 20

The least-squares line ŷ = 55 + 2.5x predicts y = test score from x = hours studied. One data point has x = 10 and y = 75.1. Find its residual.

Linear Regression & Correlation · 21

A data set has correlation r = 0.02. Which best describes the correlation? (A) strong positive (B) weak positive (C) strong negative (D) weak negative (E) no correlation

Linear Regression & Correlation · 22

The least-squares line ŷ = 52.5 + 3.5x predicts y = test score from x = hours studied. What does the y-intercept 52.5 mean? (A) When the test score is 0, x is 52.5. (B) The test score is always at least 52.5 points. (C) When x is 0, the predicted test score is 52.5 points. (D) For each additional hour, the predicted test score increases by 52.5 points.

Linear Regression & Correlation · 23

A least-squares line has correlation r = -0.7. What percent of the variation in y is explained by the linear relationship with x?

Linear Regression & Correlation · 24

The least-squares line ŷ = -25.5 + 0.8x predicts y = number of lemonade cups sold from x = daily high temperature in °F. Predict y when x = 74.

Linear Regression & Correlation · 18

ANSWER

-1.8

Linear Regression & Correlation · 17

ANSWER

405

Linear Regression & Correlation · 20

ANSWER

-4.9

Linear Regression & Correlation · 19

ANSWER

36.7

Linear Regression & Correlation · 22

ANSWER

C

Linear Regression & Correlation · 21

ANSWER

E

Linear Regression & Correlation · 24

ANSWER

33.7

Linear Regression & Correlation · 23

ANSWER

49%