Linear Regression & Correlation · 1

For a data set, r = 0.8, the standard deviation of x is sx = 8 and the standard deviation of y is sy = 5. Find the slope b of the least-squares line.

Linear Regression & Correlation · 2

For a data set, r = 0.4, sx = 2, sy = 12, the mean of x is 21 and the mean of y is 111. Find the y-intercept a of the least-squares line $\hat{y} = a + bx$.

Linear Regression & Correlation · 3

A least-squares line has $r^2 = 0.81$ and a negative slope. Find the correlation r.

Linear Regression & Correlation · 4

The least-squares line $\hat{y} = 55 + 4.2x$ predicts y = test score from x = hours studied. One data point has x = 3 and y = 72.6. Find its residual.

Linear Regression & Correlation · 5

The least-squares line $\hat{y} = 640 - 12.5x$ predicts y = number of tickets sold from x = ticket price in dollars, using data with x from 10 to 40. Is it reasonable to use the line to predict y when x = 21? Answer yes or no.

Linear Regression & Correlation · 6

For a data set, r = 0.9, the standard deviation of x is sx = 2 and the standard deviation of y is sy = 10. Find the slope b of the least-squares line.

Linear Regression & Correlation · 7

For a data set, r = -0.8, sx = 10, sy = 12, the mean of x is 20 and the mean of y is 50. Find the y-intercept a of the least-squares line $\hat{y} = a + bx$.

Linear Regression & Correlation · 8

A least-squares line has $r^2 = 0.16$ and a positive slope. Find the correlation r.

Linear Regression & Correlation · 2

ANSWER

60.6

Linear Regression & Correlation · 1

ANSWER

0.5

Linear Regression & Correlation · 4

ANSWER

5

Linear Regression & Correlation · 3

ANSWER

-0.9

Linear Regression & Correlation · 6

ANSWER

4.5

Linear Regression & Correlation · 5

ANSWER

yes

Linear Regression & Correlation · 8

ANSWER

0.4

Linear Regression & Correlation · 7

ANSWER

69.2

Linear Regression & Correlation · 9

The least-squares line $\hat{y} = 8 + 2.8x$ predicts y = commute time in minutes from x = distance from school in miles. One data point has x = 12 and y = 40.5. Find its residual.

Linear Regression & Correlation · 10

The least-squares line $\hat{y} = 8 + 2.8x$ predicts y = commute time in minutes from x = distance from school in miles, using data with x from 1 to 12. Is it reasonable to use the line to predict y when x = 56? Answer yes or no.

Linear Regression & Correlation · 11

For a data set, r = 0.5, the standard deviation of x is sx = 2 and the standard deviation of y is sy = 25. Find the slope b of the least-squares line.

Linear Regression & Correlation · 12

For a data set, r = -0.4, sx = 8, sy = 5, the mean of x is 23 and the mean of y is 82. Find the y-intercept a of the least-squares line $\hat{y} = a + bx$.

Linear Regression & Correlation · 13

A least-squares line has $r^2 = 0.64$ and a negative slope. Find the correlation r.

Linear Regression & Correlation · 14

The least-squares line $\hat{y} = 28 - 1.5x$ predicts y = value of the car in thousands of dollars from x = age of a car in years. One data point has x = 7 and y = 12.4. Find its residual.

Linear Regression & Correlation · 15

The least-squares line $\hat{y} = 24.5 - 1.5x$ predicts y = value of the car in thousands of dollars from x = age of a car in years, using data with x from 1 to 9. Is it reasonable to use the line to predict y when x = 33? Answer yes or no.

Linear Regression & Correlation · 16

For a data set, r = -0.75, the standard deviation of x is sx = 2 and the standard deviation of y is sy = 25. Find the slope b of the least-squares line.

Linear Regression & Correlation · 10

ANSWER

no

Linear Regression & Correlation · 9

ANSWER

-1.1

Linear Regression & Correlation · 12

ANSWER

87.75

Linear Regression & Correlation · 11

ANSWER

6.25

Linear Regression & Correlation · 14

ANSWER

-5.1

Linear Regression & Correlation · 13

ANSWER

-0.8

Linear Regression & Correlation · 16

ANSWER

-9.375

Linear Regression & Correlation · 15

ANSWER

no

Linear Regression & Correlation · 17

For a data set, r = -0.64, sx = 8, sy = 25, the mean of x is 14 and the mean of y is 47. Find the y-intercept a of the least-squares line $\hat{y} = a + bx$.

Linear Regression & Correlation · 18

A least-squares line has $r^2 = 0.09$ and a negative slope. Find the correlation r.

Linear Regression & Correlation · 19

The least-squares line $\hat{y} = 22 + 1.4x$ predicts y = free throws made out of 50 from x = hours of practice per week. One data point has x = 2 and y = 29.3. Find its residual.

Linear Regression & Correlation · 20

The least-squares line $\hat{y} = 5 + 2.8x$ predicts y = commute time in minutes from x = distance from school in miles, using data with x from 1 to 12. Is it reasonable to use the line to predict y when x = 45? Answer yes or no.

Linear Regression & Correlation · 21

For a data set, r = -0.8, the standard deviation of x is sx = 4 and the standard deviation of y is sy = 20. Find the slope b of the least-squares line.

Linear Regression & Correlation · 22

For a data set, r = -0.5, sx = 5, sy = 12, the mean of x is 29 and the mean of y is 51. Find the y-intercept a of the least-squares line $\hat{y} = a + bx$.

Linear Regression & Correlation · 23

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 = 6 and y = 31.2. Find its residual.

Linear Regression & Correlation · 24

The least-squares line $\hat{y} = 55 + 2.5x$ predicts y = test score from x = hours studied, using data with x from 1 to 10. Is it reasonable to use the line to predict y when x = 10? Answer yes or no.

Linear Regression & Correlation · 18

ANSWER

-0.3

Linear Regression & Correlation · 17

ANSWER

75

Linear Regression & Correlation · 20

ANSWER

no

Linear Regression & Correlation · 19

ANSWER

4.5

Linear Regression & Correlation · 22

ANSWER

85.8

Linear Regression & Correlation · 21

ANSWER

-4

Linear Regression & Correlation · 24

ANSWER

yes

Linear Regression & Correlation · 23

ANSWER

2.4