Linear & Exponential Regression from Data · 1

Find the least-squares regression line y = mx + b for the data in the table.

x	3	4	5	6	7
y	14	18	26	28	34

Linear & Exponential Regression from Data · 2

The least-squares line for the data is y = -0.5x + 18. Find the residual for the point where x = 8.

x	2	4	6	8	10
y	17	17	13	15	13

Linear & Exponential Regression from Data · 3

An exponential model $y = a(b)^x$ passes through (0, 5) and (1, 15). Write the model.

Linear & Exponential Regression from Data · 4

An exponential regression for the temperature difference of cooling tea in °F after x minutes gives $y = 140(0.9)^x$. Predict y when x = 10. Round to the nearest tenth.

Linear & Exponential Regression from Data · 5

Use the least-squares regression line for the data to predict y when x = 14.

x	4	6	8	10	12
y	11	14	9	16	15

Linear & Exponential Regression from Data · 6

An exponential model $y = a(b)^x$ passes through (1, 10) and (3, 40). Write the model.

Linear & Exponential Regression from Data · 7

A calculator gives the correlation coefficient r = 0.24 for a data set. Which describes the data? (A) a strong positive linear relationship (B) a weak positive linear relationship (C) a strong negative linear relationship (D) a weak negative linear relationship

Linear & Exponential Regression from Data · 8

Find the least-squares regression line y = mx + b for the data in the table.

x	2	4	6	8	10
y	18	15	8	7	2

Linear & Exponential Regression from Data · 2

ANSWER

1

Linear & Exponential Regression from Data · 1

ANSWER

$y = 5x - 1$

Linear & Exponential Regression from Data · 4

ANSWER

48.8

Linear & Exponential Regression from Data · 3

ANSWER

$y = 5(3)^x$

Linear & Exponential Regression from Data · 6

ANSWER

$y = 5(2)^x$

Linear & Exponential Regression from Data · 5

ANSWER

16

Linear & Exponential Regression from Data · 8

ANSWER

$y = -2x + 22$

Linear & Exponential Regression from Data · 7

ANSWER

B

Find the least-squares regression line y = mx + b for the data in the table.

x	1	3	5	7	9
y	9	15	15	19	17

The least-squares line for the data is y = 2.5x + 3. Find the residual for the point where x = 2.

x	0	2	4	6	8
y	2	10	11	20	22

An exponential model $y = a(b)^x$ passes through (0, 5) and (3, 40). Write the model.

An exponential regression for the value of a car in dollars after x years gives $y = 24000(0.85)^x$. Predict y when x = 8. Round to the nearest tenth.

Use the least-squares regression line for the data to predict y when x = 18.

x	4	6	8	10	12
y	8	3	2	5	12

An exponential model $y = a(b)^x$ passes through (1, 24) and (3, 54). Write the model.

A calculator gives the correlation coefficient r = -0.24 for a data set. Which describes the data? (A) a strong positive linear relationship (B) a weak positive linear relationship (C) a strong negative linear relationship (D) a weak negative linear relationship

Find the least-squares regression line y = mx + b for the data in the table.

x	2	4	6	8	10
y	9	8	15	10	13

Linear & Exponential Regression from Data · 10

ANSWER

2

Linear & Exponential Regression from Data · 9

ANSWER

$y = x + 10$

Linear & Exponential Regression from Data · 12

ANSWER

6539.8

Linear & Exponential Regression from Data · 11

ANSWER

$y = 5(2)^x$

Linear & Exponential Regression from Data · 14

ANSWER

$y = 16(1.5)^x$

Linear & Exponential Regression from Data · 13

ANSWER

11

Linear & Exponential Regression from Data · 16

ANSWER

$y = 0.5x + 8$

Linear & Exponential Regression from Data · 15

ANSWER

D

Find the least-squares regression line y = mx + b for the data in the table.

x	4	6	8	10	12
y	10	21	22	23	34

The least-squares line for the data is y = -x + 23. Find the residual for the point where x = 2.

x	2	3	4	5	6
y	19	20	23	18	15

An exponential model $y = a(b)^x$ passes through (0, 5) and (2, 20). Write the model.

An exponential regression for the temperature difference of cooling tea in °F after x minutes gives $y = 140(0.9)^x$. Predict y when x = 9. Round to the nearest tenth.

Use the least-squares regression line for the data to predict y when x = 16.

x	4	6	8	10	12
y	8	15	19	25	28

An exponential model $y = a(b)^x$ passes through (1, 6) and (3, 24). Write the model.

A calculator gives the correlation coefficient r = 0.18 for a data set. Which describes the data? (A) a strong positive linear relationship (B) a weak positive linear relationship (C) a strong negative linear relationship (D) a weak negative linear relationship

Find the least-squares regression line y = mx + b for the data in the table.

x	4	6	8	10	12
y	17	11	7	5	5

Linear & Exponential Regression from Data · 18

ANSWER

-2

Linear & Exponential Regression from Data · 17

ANSWER

y = 2.5x + 2

Linear & Exponential Regression from Data · 20

ANSWER

54.2

Linear & Exponential Regression from Data · 19

ANSWER

$y = 5(2)^x$

Linear & Exponential Regression from Data · 22

ANSWER

$y = 3(2)^x$

Linear & Exponential Regression from Data · 21

ANSWER

39

Linear & Exponential Regression from Data · 24

ANSWER

y = -1.5x + 21

Linear & Exponential Regression from Data · 23

ANSWER

B