WEEK 7: HOMEWORK

Started: Jun 20 at 3:33pm

QUIZ INSTRUCTIONS

Click the button to start the homework set. You can re-do this assignment as often as you need. Be sure to have the Week 7 spreadsheet available to help with the calculations. It is available in the Week 7: Resources page.

QUESTIONS
Question 1
Question 2
Question 3
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Question 7
Question 8

Time Elapsed: Hide
Attempt due: Jun 24 at 12:59am
0 Minutes, 22 Seconds

Question 1 — 2 pts

Two variables have a positive non-linear correlation. Does the dependent variable increase or decrease as the independent variable increases?

Homework Help:

7DA. Linear, non-linear, positive and negative correlations (PDF)

- Dependent variable decreases
- Dependent variable would remain the same
- Cannot determine from information given
- Dependent variable increases

Question 2 — 2 pts

What does the variable ρ represent?

Homework Help:

7DB. Correlation coefficient and coefficient of determination, notation and meanings (PDF)

- The coefficient of determination
- The critical value for the correlation coefficient
- The population correlation coefficient
- The sample correlation coefficient

Question 3 — 2 pts

A golfer wants to determine if the type of driver she uses each year can be used to predict the amount of improvement in her game. Which variable would be the response variable?

Homework Help:

7DC. Explanatory and response variables (PDF)

- The rating of the golfer
- The number of holes she plays
- The improvement in her game
- The type of driver

Question 4 — 2 pts

Two variables have a negative linear correlation. Is the slope of the regression line between these two variables positive or negative?

Homework Help:

7DA. Linear, non-linear, positive and negative correlations (PDF)

- Positive. As one variable increases, so does the other
- Negative. As one variable increases, the other decreases
- Positive. As one variable increases, the other decreases
- Negative. As one variable increases, so does the other

Question 5 — 2 pts

A value of the dependent variable that corresponds to the value of x_i would be given the notation of:

Homework Help:

7DD. Regression notation of m, b, y1, x1, yi, xi, means of variables, estimates of variables (PDF)

- m
- b
- y_i
- y_1

Question 6 — 2 pts

If there is a $\hat{}$, or hat, above a variable, what does that mean?

Homework Help:

7DD. Regression notation of m, b, y1, x1, yi, xi, means of variables, estimates of variables (PDF)

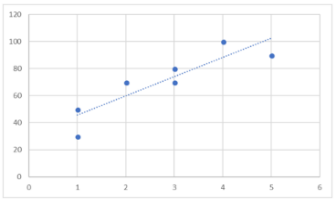
- the value is an outlier
- the value is the standard deviation
- the value is the mean
- the value is an estimate

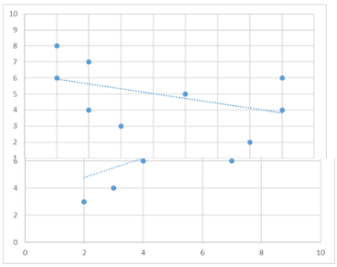
Question 7 2 pts

Which of the following graphs displays the regression line of $\hat{y}=0.75x + 3.34$?

Homework Help:

7VA. Scatter plots with regression lines, slope and intercept (2:32)





Question 8 2 pts

Find the regression equation for the following data set

x	123	146	127	161	122	174	134	155
y	80	51	59	41	44	59	51	63

Homework Help:

7VB. Finding regression line equation using spreadsheet (3:54)

- -0.13x+74.50
- 0.13x – 74.50
- cannot be determined
- 74.50x – 0.13

Question 9 2 pts

A data set whose original x values ranged from 41 through 78 was used to generate a regression equation of $\hat{y}=5.3x – 21.9$. Use the regression equation to predict the value of y when x=81.

Homework Help:

7VC. Validity of regression equation to estimate y from values of x (3:00)

- 451.2
- Meaningless result
- 391.2
- 318.7

Question 10 2 pts

A data set whose original x values ranged from 120 through 351 was used to generate a regression equation of $\hat{y}=0.06x + 14.2$. Use the regression equation to predict the value of y when x=119.

Homework Help:

7VC. Validity of regression equation to estimate y from values of x (3:00)

- 21.40
- Meaningless result
- -7.06
- 21.34

Question 11 2 pts

Find the regression equation for the following data set

x	7	8	5	9	4	10	9	6	7	8
y	4	2	8	3	7	9	3	5	6	3

Homework Help:

7VB. Finding regression line equation using spreadsheet (3:54)

- 0.40x + 7.96
- -0.40x – 7.96
- 0.40x – 7.96
- -0.40x + 7.96

Question 12 2 pts

A data set whose original x values ranged from 137 through 150 was used to general a regression equation of $\hat{y}$=-4.5x + 51. Use the regression equation to predict the value of y when x=139.

Homework Help:

7VC. Validity of regression equation to estimate y from values of x (3:00)

- -547.5
- 574.5
- -574.5
- Meaningless result

Question 13 2 pts

If the linear correlation coefficient is 0.661, what is the value of the coefficient of determination?

Homework Help:

7DB. Correlation coefficient and coefficient of determination, notation and meanings (PDF)

- 1.322
- -0.437
- 0.661
- 0.437

Question 14 2 pts

If the linear correlation coefficient is -0.156, what is the value of the coefficient of determination?

Homework Help:

7DB. Correlation coefficient and coefficient of determination, notation and meanings (PDF)

- 0.312
- 0.024
- -0.024
- -0.312

Question 15 2 pts

If the coefficient of determination is 0.492, what percentage of the data about the regression line is explained?

Homework Help:

7DB. Correlation coefficient and coefficient of determination, notation and meanings (PDF)

- 49.2%
- 50.8%
- 70.1%
- 24.2%

Question 16 2 pts

If the coefficient of determination is 0.822, what percentage of the data about the regression line is unexplained?

Homework Help:

7DB. Correlation coefficient and coefficient of determination, notation and meanings (PDF)

- 32.2%
- 17.8%
- 6.7.6%
- 82.2%

Question 17 2 pts

If the independent variables explained more than 50% of the variation in the dependent variables, which of the following would be true?

Homework Help:

7DE. Compare linear regression and multiple regression (PDF)

- There are two independent variables
- The coefficient of determination is above 0.5
- There are two dependent variables
- The coefficient of determination is below 0.5

Question 18 2 pts

The equation used to predict how tall a dog will be as an adult is $\hat{y}=4.5 + 0.7x_1 + 0.55x_2$, where x_1 is the height of the mother and x_2 is the height of the father. Use this equation to

predict the height of a puppy whose mother is 40.3 inches tall and whose father is 45.9 inches tall.

Homework Help:

7DF. Using a multiple regression equation to estimate values from independent variable values (PDF)

- 57.96 inches
- 53.46 inches
- 50.75 inches
- 43.10 inches

Question 19 2 pts

The equation used to predict how long it will take to receive a package through the mail is $\hat{y}=0.5 + 0.02x_1 + 0.85x_2$ days, where x_1 is the distance to travel and x_2 is the weight of the package. Use this equation to predict the how long it will take to receive a package that is 249 miles away and weighs 2.1 pounds.

Homework Help:

7DF. Using a multiple regression equation to estimate values from independent variable values (PDF)

- 1.6 days
- 7.8 days
- 6.8 days
- 7.3 days

Question 20 2 pts

The equation used to predict how long a cold will last is $\hat{y}=-1.8 + 0.09x_1 + 3.2x_2 - 1.9x_3$, where x_1 is person's temperature on the first day, x_2 is number of people seen each day, and x_3 is the amount of sleep the person gets. Use this equation to predict how long a cold will last with a temperature of 101.4 degrees, an average of 4 people seen each day, and 6 hours of sleep.

Homework Help:

7DF. Using a multiple regression equation to estimate values from independent variable values (PDF)

- 10.5 days
- 8.7 days
- 9.5 days
- 9.7 days

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