Week 6: Assignment 6

The due date for submitting this assignment has passed.

Due on 2023-03-08, 23:59 IST.

Assignment submitted on 2023-03-05, 12:15 IST

1) For the given data, determine the R-squared value for the given data *1 point*

Data:

Miles travel (independent variable)	Petrol Consumption in litre (dependent variable)
20	1
45	3
56	5
34	2
28	1.6
49	3.7

- 0.887
- (●) 0.956
- 0.945
- 0.932

Yes, the answer is correct.
Score: 1
Accepted Answers:
0.956

2) With reference to the data given in question no. 1, test the null hypothesis: "There is no significant relationship between the variables", we will: *1 point*

- Accept the null hypothesis
- (●) Reject the null hypothesis
- Can't state any conclusion
- None of the above

Yes, the answer is correct.
Score: 1
Accepted Answers:
Reject the null hypothesis

3) State TRUE or FALSE, in context to regression analysis – *1 point*

Statement: "The variance of error, is same for all values of the independent variable"

- (●) True
- False

Yes, the answer is correct.
Score: 1
Accepted Answers:
True

4) A regression analysis between sales (Y in $1000) and advertising (X in dollars) resulted in the following equation *1 point*
Y = 30,000 + 5 X
The above equation implies that an:

- increase of $5 in advertising is associated with an increase of $5,000 in sales
- increase of $1 in advertising is associated with an increase of $5 in sales
- increase of $1 in advertising is associated with an increase of $35,000 in sales
- (●) increase of $1 in advertising is associated with an increase of $5,000 in sales

Yes, the answer is correct.
Score: 1
Accepted Answers:
increase of $1 in advertising is associated with an increase of $5,000 in sales

5) In a regression and correlation analysis if r2 = 1, then Sum of square of Error (SSE) *1 point*

- SSE must also be equal to one
- (●) SSE must be equal to zero
- SSE can be any positive value
- SSE must be negative

Yes, the answer is correct.
Score: 1
Accepted Answers:
SSE must be equal to zero

6) In a regression analysis if Sum of square of Error (SSE) = 200 and Sum of square of Regression (SSR) = 300, then the coefficient of determination is *1 point*

- 0.6667
- 0.4000
- 0.6000
- 1.5000

Yes, the answer is correct.
Score: 1
Accepted Answers:
0.6000

7) Regression analysis was applied between demand for a product (Y) and the price of the product (X), and the following estimated regression equation was obtained. *1 point*

Y = 120 - 10 X

Based on the above estimated regression equation, if price is increased by 2 units, then demand is expected to

- increase by 120 units
- increase by 100 units
- increase by 20 units
- decrease by 20 units

Yes, the answer is correct.
Score: 1
Accepted Answers:
decrease by 20 units

8) Regression analysis was applied between sales (Y in $1,000) and advertising (X in $100), and the following estimated regression equation was obtained. *1 point*

Y = 80 + 6.2 X

Based on the above estimated regression line, if advertising is $10,000, then the point estimate for sales (in dollars) is

- $62,080
- $142,000
- $700
- $700,000

Yes, the answer is correct.
Score: 1
Accepted Answers:
$700,000

9) In regression analysis if the dependent variable is measured in dollars, the independent variable *1 point*

- must also be in dollars
- must be in some units of currency
- can be any units
- cannot be in dollars

Yes, the answer is correct.
Score: 1
Accepted Answers:
can be any units

10) If the coefficient of correlation is 0.90, then the coefficient of determination *1 point*

- is also 0.9
- is either 0.81 or -0.81
- can be either negative or positive
- must be 0.81

Yes, the answer is correct.
Score: 1
Accepted Answers:
must be 0.81