Input csv data is show below

Number of meals with fish,Total Mercury in mg/g

14,4.484

7,4.789

5,3.856

8,4.888

21,10.849

18,6.457

22,11.222

6,4.908

19,10.116

7,3.567

16,6.092

17,3.799

20,6.781

5,5.995

7,1.717

14,4.615

1,3.362

6,3.928

9,1.833

10,5.668

13,4.7

9,2.272

16,4.812

5,1.342

18,6.123

7,4.622

8,7.805

7,2.643

8,6.111

7,2.476

10,4.317

4,1.789

4,2.484

7,1.757

6,1.239

5,5.311

19,6.103

3,1.984

4,2.697

7,0.692

7,2.404

9,1.503

17,8.231

14,5.321

7,3.81

21,1.765

4,0.408

7,3.901

10,0.48

11,3.826

7,3.451

9,2.32

2,4.086

7,2.272

3,2.564

7,7.998

11,5.081

8,0.366

7,2.477

4,5.288

7,5.676

7,2.296

21,6.11

4,1.502

7,3.71

3,2.752

3,0.987

19,10.14

7,1.616

12,4.65

13,7.241

18,9.36

7,3.753

13,4.008

21,5.345

1,2.455

0,0.941

1,2.478

1,3.212

10,5.214

0,1.12

0,0.745

2,4.645

2,4.981

1,2.812

0,0.846

2,5.142

0,1.111

0,1.094

2,2.978

2,3.942

0,1.131

0,0.979

0,0.844

1,2.411

1,2.497

10,3.764

20,8.178

19,7.664

22,9.716

The data in this document gives the number of meals eaten that contain fish (per week) and mercury levels in head hair for 100 fisherman. Save the data to a format that can be read into R. Read the data in for analysis. Use R to calculate the quantities and generate the visual summaries requested below.

1. To get a sense of the data, generate a scatterplot (using an appropriate window, label the axes, and title the graph). Consciously decide which variable should be on the x-axis and which should be on the y-axis. Using the scatterplot, describe the form, direction, and strength of the association between the variables. (4 points)

(2) Calculate the correlation coefficient. What does the correlation tell us? (2 points)

(3) Find the equation of the least squares regression equation and write out the equation. Add the regression line to the scatterplot you generated above. (2 points)

Input csv data is show below

Number of meals with fish,Total Mercury in mg/g

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1,2.497

10,3.764

20,8.178

19,7.664

22,9.716

(4) What is the estimate for β1? How can we interpret this value? What is the estimate for 𝛽0? What is the interpretation of this value? For the interpretations, you should be interpreting them in the context

of this specific data set. (4 points)

(5) Calculate the ANOVA table AND the table which gives the standard error of β1. Formally test the hypothesis that β1= 0 using either the F-test or the t-test at the α = 0.05 level. Either way, present your results using the 5-step procedure, as described in the course notes.

Within your conclusion, calculate the R-squared value and interpret this. Also, calculate (using R) and interpret the 90% confidence interval for β1. (8 points)