Question 1:

In developing a regression equation from the following data to predict y by x, the slope is:

|  |  |
| --- | --- |
| x | y |
| 5 | 8 |
| 2 | 5 |
| 9 | 7 |
| 6 | 3 |

|  |  |
| --- | --- |
|  | 0.44 |

|  |  |
| --- | --- |
|  | 0.18 |

|  |  |
| --- | --- |
|  | 1.88 |

|  |  |
| --- | --- |
|  | 4.76 |

Question 2:

In developing a regression equation from the following data to predict y by x, the y intercept is:

|  |  |  |
| --- | --- | --- |
| x |  | y |
| 11 |  | 5 |
| 16 |  | 18 |
| 4 |  | 6 |
| 2 |  | 15 |
| 3 |  | 14 |

|  |  |
| --- | --- |
|  | 10.550 |

|  |  |
| --- | --- |
|  | 0.1867 |

|  |  |
| --- | --- |
|  | 4.256 |

|  |  |
| --- | --- |
|  | 3.504 |
| Question 4:  The following data points yield the regression model shown below. What is the residual in this model for x = 20?   |  |  |  | | --- | --- | --- | | x |  | y | | 20 |  | 11 | | 17 |  | 16 | | 14 |  | 15 | | 13 |  | 14 | | 9 |  | 18 | | 4 |  | 22 |  |  |  | | --- | --- | | http://edugen.wileyplus.com/edugen/courses/crs4077/art/qb/qu/c13/y_hat.bmp | =23.724 - 0.602x |  |  |  | | --- | --- | |  | -0.296 |  |  |  | | --- | --- | |  | -0.306 |  |  |  | | --- | --- | |  | 15.298 |  |  |  | | --- | --- | |  | -0.684 | |  |
|  |  |
|  |  |

Question 5:

A simple regression model has been developed using a sample of 11 pairs of observations. The sum of squares of error is 237.64. The standard error of the estimate is:

|  |  |
| --- | --- |
|  | 5.139 |

|  |  |
| --- | --- |
|  | 4.648 |

|  |  |
| --- | --- |
|  | 23.764 |

|  |  |
| --- | --- |
|  | 4.875 |
|  |  |
|  |  |

Question 6 : Consider the following output from a regression analysis. Based on this output, what is the equation of the regression model?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ANOVA |  |  |  |  |
|  | df | SS | MS | F |
| Regression | 1 | 9315.23 | 9315.23 | 8.46 |
| Residual | 9 | 9907.49 | 1100.83 |  |
| Total | 10 | 19222.73 |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Coefficients | Standard Error | t Stat | P-value |
| Intercept | 57.60 | 53.18 | 11.40 | .0000019 |
| X Variable 1 | -11.26 | 1.64 | -2.91 | 0.017341 |
|  |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | |  |  | | --- | --- | | http://edugen.wileyplus.com/edugen/courses/crs4077/art/qb/qu/c13/y_hat.bmp | = 9907.49 + 9315.23x | |

|  |  |  |  |
| --- | --- | --- | --- |
|  | |  |  | | --- | --- | | http://edugen.wileyplus.com/edugen/courses/crs4077/art/qb/qu/c13/y_hat.bmp | =606.47 - 4.76x | |

|  |  |  |  |
| --- | --- | --- | --- |
|  | |  |  | | --- | --- | | http://edugen.wileyplus.com/edugen/courses/crs4077/art/qb/qu/c13/y_hat.bmp | = 2100.10 - 0.51x | |

|  |  |  |  |
| --- | --- | --- | --- |
| http://edugen.wileyplus.com/edugen/courses/crs4077/art/qb/qu/c13/y_hat.bmp=57.60-11.26x | |  |  | | --- | --- | |  |  | |
| Question:  IT appears that over the past 45 years, the number of farms in Australia declined while the average size of farms increased. The following data provided by the Australian Bureau of Agricultural and Resource Economics show five-year interval data for Australian farms. Use these data to develop the equation of a regression line to predict the average size of a farm by the number of farms |  |

|  |
| --- |
| http://edugen.wileyplus.com/edugen/art2/common/pixel.gif  Top of Form |

Compute r^2 for the following data. Discuss the value of r^2 obtained.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| x | 139 | 122 | 103 | 88 | 63 | 30 | 25 |
| y | 26 | 29 | 45 | 70 | 85 | 110 | 131 |

Round your answer to 3 decimal places.

r^2 = 

This is a value of r^2

The tolerance is +/- 0.005.

Question:

The following table gives information on the amount of sugar (in grams) and the calorie count in one serving of a sample of 13 varieties of Kellogg's cereal.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sugar (grams) | 6 | 15 | 12 | 11 | 8 | 6 | 7 | 3 | 7 | 14 | 20 | 5 | 13 |
| Calories | 120 | 200 | 160 | 110 | 120 | 80 | 210 | 120 | 120 | 190 | 190 | 110 | 120 |

The predictive regression equation of the number of calories on the amount of sugar is y = 91.891 + 5.161*x*, where *x* is amount of sugar (in grams) and *y* is calories.

Calculate the predicted calorie count for a cereal with 18 grams of sugar per serving. Round the answer to the nearest integer.

calories.

Question:

The following information is obtained for a sample of 90 observations taken from a population.

*SSxx* = 370.917 , *s*e = 0.923 , and 

Make a 97% confidence interval for *B* .

The 97% confidence interval for *B* is (, ) [Round your answers to 2 decimal places.]