Pre Calculus - 11.7 day 2 homework supplemental problems

You will do the following for problems 2, in the book on page 720 and the two below. Disregard their instructions.

a. In your graphing calculator make a scatter plot of the data, and identify the relationship. Is it a strong/weak positive/negative linear relationship?

b. Run the two variable statistics and find the correlation coefficient. What does this tell you about the data?

c. Run the  linear regression and find the linear equation that best represents this data. Interpret the slope and the y-intercept in context of the problem.

d. **(only for #2)**

 2d. If appropriate, use your linear regression line and predict the amount of Calories in a serving of cereal that has 4.5 grams of fiber or 7 grams of fiber.

e. Graph and analyze the residual plot and determine whether the model is appropriate.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **A. COLLEGE** The data in the table represent the American College Test (ACT) composite scores and grade point averages (GPA) of 20 randomly selected students after their first semester in college. A college counselor wants to determine if there is a correlation between ACT scores and first semester GPAs.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ACT** | 27 | 18 | 17 | 15 |
| **GPA** | 3.9 | 29 | 3.3 | 3.0 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ACT** | 22 | 20 | 17 | 21 |
| **GPA** | 3.6 | 2.7 | 2.9 | 3.4 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ACT** | 25 | 17 | 25 | 18 |
| **GPA** | 3.5 | 3.1 | 4.0 | 3.0 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ACT** | 23 | 19 | 20 | 29 |
| **GPA** | 3.6 | 2.6 | 3.0 | 3.4 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ACT** | 23 | 28 | 22 | 20 |
| **GPA** | 1.8 | 4.0 | 3.0 | 4.0 |

 | **B. SALES** A sales associate wants to know if there is a relationship between the average number of times his coworkers contact clients each month and the average monthly sales volume in thousands of dollars. He collected the data shown in the table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Clients** | 21 | 23 | 48 | 50 | 46 |
| **Sales** | 30 | 30 | 95 | 110 | 80 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Clients** | 12 | 55 | 14 | 50 | 16 |
| **Sales** | 15 | 130 | 25 | 90 | 30 |

 |

The rest of your homework is pg. 721 7-10, 12 a & c.

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