AP Statistics

Intro to ch. 12. Regression Review

*Do heavier cars use more gasoline? Below are some cars chosen at random; Let x be the weight of the car (in hundreds of pounds) and y be miles per gallon. The following data is from Consumer Reports, Volume 62, #4*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| X | *27* | *44* | *32* | *47* | *23* | *40* | *34* | *52* |
| *Y* | *30* | *19* | *24* | *13* | *29* | *17* | *21* | *14* |

1. Create a scatterplot. Describe the association shown in the scatterplot.
2. Determine the equation of the least-squares regression line.
3. Calculate the value of the correlation.
4. Calculate and interpret the residual for the care that was 3400 pounds and got 21 mpg.

5. Interpret the slope of the least-squares regression line.

6. Interpret the standard deviation of the residuals.

7. Interpret the value of ****.