With the high price of gasoline in the U.S., motorists are concerned about the gas mileage of their cars. The table below gives the curb weights and highway mileage for a sample of 2007 four-door compact sedans, all with automatic transmissions.

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| **Car Type** | **Curb Weight  (in 100 lbs)** | **Highway mpg** |
| Audi A4 | 34.50 | 32 |
| Chevrolet Cobalt | 32.16 | 32 |
| Ford Focus | 26.36 | 34 |
| Honda Civic | 26.90 | 40 |
| Honda Civic Hybrid | 28.75 | 51 |
| Hyundai Accent | 24.03 | 36 |
| Kia Spectra | 29.72 | 35 |
| Mazda3 | 28.11 | 34 |
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| Mercedes-Benz C280 | 34.60 | 28 |
| Nissan Sentra | 28.97 | 36 |
| Saturn ION | 28.05 | 32 |
| Subaru Impreza | 30.67 | 28 |
| Suzuki Aerio | 27.16 | 31 |
| Toyota Corolla | 25.95 | 38 |
| Toyota Yaris | 23.26 | 39 |
| VW Rabbit | 29.11 | 30 |

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1. What is the weight of the Kia Spectra in hundreds of pounds? Of the Toyota Yaris?
2. Is there a point on the scatterplot that is an outlier? If so, which car is it? Explain.
3. Find the line of best fit: graph the line on the scatterplot and create an equation for your line. **Ignore the outlier**.
4. Enter the compact car data into your lists, **ignoring the outlier**: Stat🡪Edit. Create a linear regression equation for the data.
5. Select the best interpretation of the slope of the regression line from the choices below. Explain your choice.
   1. If the weight of the car is increased by 100 pounds, then we predict that the car’s highway gas mileage will decrease by about 0.75 mpg.
   2. If one model of a car is 100 pounds heavier than another model, then we predict that its highway gas mileage will be 0.75 mpg less.
6. A compact car that is not in the table, the Acura TSX, has a weight of 3,345 lbs. Use each of the following to predict the highway mpg for the Acura TSX.
   1. Your equation for the line of best fit.
   2. The equation of the regression line.
7. The Acura TSX has a highway mpg of 31. Using the regression equation, what is the error in prediction for the Acura TSX?
8. Draw the errors between our line of best fit and the actual data points on the scatterplot. These values are called residuals.
9. The Volkswagen Jetta has a curb weight of 3,303 lbs.
   1. Use the regression equation to predict the highway mpg for the Jetta.
   2. The Jetta actually has highway mpg of 32. What is the error in the prediction for the Jetta?