

### Fleet Manager Scatter Plot

You wanted to know if there was a relationship between the speed of the truck and the gas consumption. You have been collecting gas consumption data from 4 trucks over the past several months at their average speeds. This data is listed in the chart below.

- A. You realize that if you want to find any correlation between the data, the first thing you need to do is determine the mean of the gas mileage at every speed.

Truck	50 mph	55 mph	60 mph	65 mph	70 mph
# 1	7.1 mpg	6.52 mpg	5.8 mpg	5 mpg	4.73 mpg
# 2	6.45 mpg	5.9 mpg	5.02 mpg	4.28 mpg	3.74 mpg
# 3	6.9 mpg	6.45 mpg	5.6 mpg	4.57 mpg	4 mpg
# 4	6.75 mpg	6.33 mpg	5.58 mpg	4.55 mpg	3.93 mpg
<b>Mean miles per gallon</b>					

- B. Once you have determined the means, create a scatter plot using a graphing calculator, Desmos or another graphing software.
- C. Is there a correlation between the speed and gas consumed? If so, what type?
- D. If there is a correlation, formulate an equation which expresses miles per gallon as a function of speed.

- E. What type of function is this best fit equation?
- F. Explain what the function represents and what each term of the equation stands for.
- G. Using your best fit equation, evaluate the function in terms of a truck doing a mean speed of 67 mph.
- H. Using your best fit equation, evaluate the function in terms of another truck using an average of 5.4 miles per gallon of diesel fuel.