Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period:\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# 7-2 Line of Best Fit Homework

How does the size of your car affect the amount of gas that it uses? The data below shows the weight of different cars and the MPG (miles per gallon) that they get.

1. What kind of correlation does this graph have?
2. Choose two points and draw your trend line.

MPG

* 1. Find the slope between the two lines
	2. Write the equation for the best fit line.

Car weight (lb)

1. Predict the MPG for a car that weighs 3800 lbs.
2. The average weight of a Volkswagen is 2040 lbs, and they get about 32 MPG. Add this point to the graph. Does it change your correlation to be better, worse, or about the same?
3. The average weight of a Pontiac is 3600 LBS, and they get about 20 MPG. Add this point to the graph. Does it change your correlation to be better, worse, or about the same?

Is the weight of a bear related to it’s chest size? Researchers anesthetized bears then measured their chest size and their weight. The results are given below for 8 male bears

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chest (in) | 26 | 45 | 54 | 49 | 41 | 49 | 44 | 19 |
| Weight (lbs) | 90 | 344 | 416 | 348 | 262 | 360 | 332 | 34 |



1. What kind of correlation does this graph have?

Weight (lb)

1. Choose two points and draw your trend line.
	1. Find the slope between the two lines

Chest (inches)

Weight (lb)

* 1. Write the equation for the best fit line.

Chest (inches)

1. Predict the weight of a bear that has a chest size of 30 inches
2. It is easier to measure a bear’s chest than to pick it up and weigh it. Describe how a graph like this would be helpful to biologists