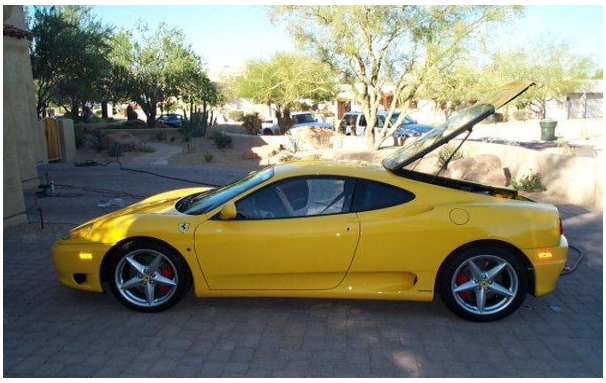
Chandler Gilbert Community College
2626 East Pecos Road
Chandler, AZ 85225
February 7, 2001



Jim Baylor
Stop and Crash Co.
1 Slow Lane
Junk Car City, MO 83457

Dear Jim,

We received your letter requesting a thorough examination of the Mode Michigan 500 data coupled with a clear explanation of the steps we used to reach the solution. Specifically, each set of race records will be analyzed. Then, based on the resulting trends, we will provide you with the most competitive speed required for the 2001 race.

In the process a scatter plot will be created with Goober's figures. (the first will be based on the Goober's figures; the second on Hal's figures.) Goober's numbers can be written as an ordered pair such as the speed and …

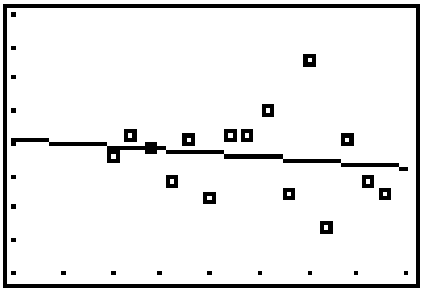
We want to find the relationship between two variables such as the year and the average winning speed; each set of figures is called an ordered pair. Each pair represents a point on a graph; the resulting pattern of all the points explains the relationship of each ordered pair in the data. For example, the scatter plot might indicate that when X increases, Y decreases. When the increase in X is similar to the decrease in Y, the relationship is linear, the result is a straight line. The equation that represents the data is called a mathematical model. A linear equation is a straight line that slopes up or down; $y = 4/1x + 2$ is an example of a positive slope graphed as rise over run.

Goober's data is based of average winning speed (AWS). AWS is the speed the car when it finishes the race. This is determined by dividing the distance (500 miles) by the time the first car crossed the finish line. Included in the time are all delays experienced such as not moving while an accident is cleared from the track. Therefore this time is signifantly lower than the fastest time the winning car can go.

Year	A.W.S. (mph)
1970	77.8
1972	81.4
1974	79.2
1976	74.3
1978	80.6
1980	71.4
1982	81
1984	81.4
1986	85.3
1988	72.4
1990	92.9
1992	67.2
1994	80.4
1996	73.9
1998	72.5

We figured out the information for you is we used the linear regression form. This equation is Y=mx+b. We entered all the data in our calculator and it came out to Y=-.109x+295.29 then graphed the equation. As you can see that this is not an accurate model. The speed is decrease when it should be increasing. But just for the heck of it we did an estimate of the speed of the winner in 2001. We estimated it to be 76mph. But for some friend ly advice don't listen to Goober. So, please do not take any advice from anyone who's names starts with a "G"!

AWS



Years

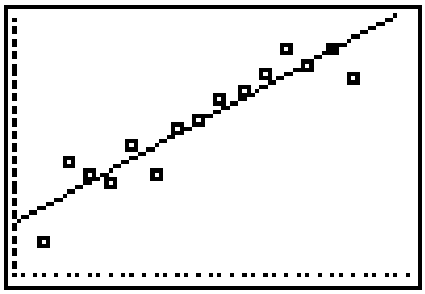
However, as the years increase by 2 (x-value), the AWS (y-value) goes way up and way down. A linear pattern does not exist.

Hal is the man! This guy knows his stuff! We gathered all his data and found out that his data is dead on! To prove it to you, here is what we did to find the answer. Here is the data.

Year	Q.S.
1970	85.1
1972	97.9
1974	95.8
1976	94.4
1978	101
1980	96.1
1982	103.5
1984	105
1986	108.4
1988	109.5
1990	112.6
1992	116.2
1994	114
1996	116.5
1998	111.7

After entering all our data in to our calculator, we graphed the scatter plot shown below.

Q.S.



Year

As you can see this graph is more accurate than Goobers! It shows a positive slope with a linear equation of Y=.968x-1817.48. If you look closely that all of the data each year it raises more linearly then what Goober's data shows. We did the qualifying times for 2001. We estimated that the speeds would reach up to 120mph if the weather was good.

Jim, please take my word on Hal. He knows what he is doing! But if you want to win the race your car must exceed 120mph! To break the Baylor curse, change your

name from Jim Baylor to Bob Vila! Then go down the track the right way using round wheels! I don't know what happened with the cow incident, but if you see a cow just go around him!! They are too dumb to move.

Sincerely,

The Math Geeks!