

# Scatter Plots

Two number lines that intersect at right angles form a **coordinate plane**. The *horizontal axis* is the **x-axis** and the *vertical axis* is the **y-axis**. The axes intersect at the **origin** and divide the coordinate plane into four sections called **quadrants**.

An **ordered pair** of numbers identifies the location of a point.

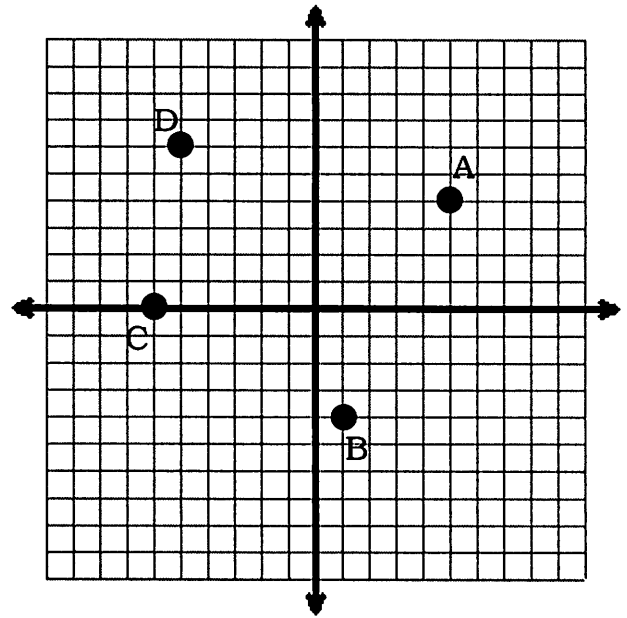
( -4 , 5 )

A (     ,     )     E ( -10 , 3 )

B (     ,     )     F ( -3 , -5 )

C (     ,     )     G ( 7 , -7 )

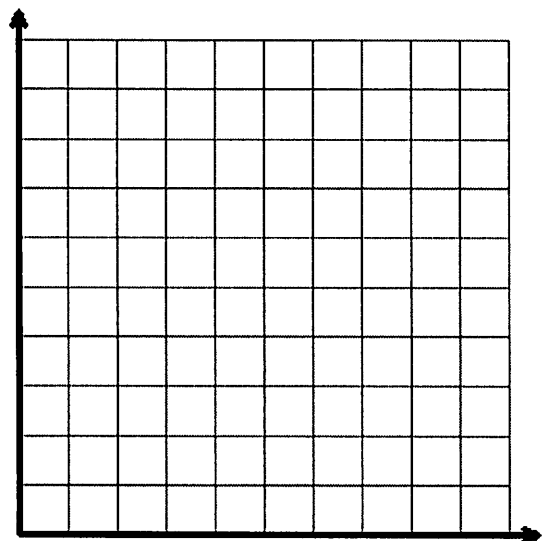
D (     ,     )     H ( 0 , 3 )



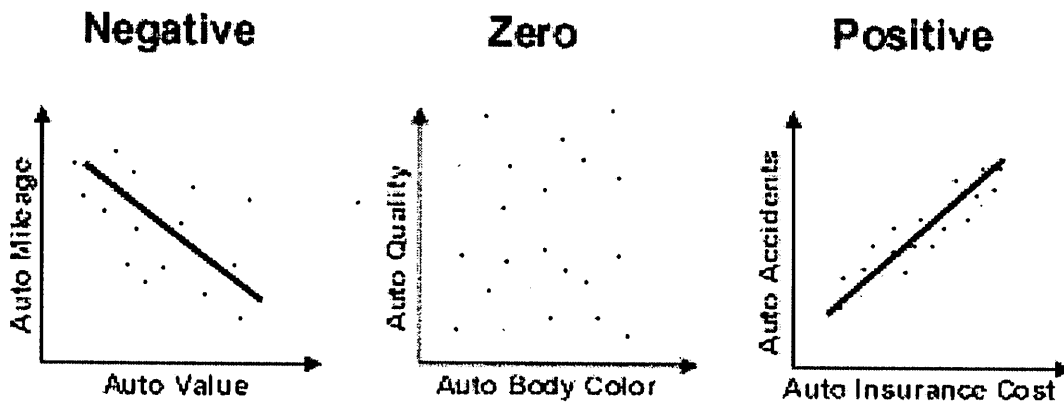
A **scatter plot** is a graph that relates two groups of data. This type of data is called **bivariate data**. Let's look at an example!

Mrs. Bennett wanted to see if the time her fourth grade students spent studying for their 20-word spelling test would affect their grade on the test. The data is shown below.

Time Spent Studying (minutes)	Number of Words Spelled Correctly
40	20
35	18
32	16
30	16
20	15
15	15
10	10
10	8



The relationship between the two groups of data, describes the **correlation** of the data. There are three types of correlation the data can have.

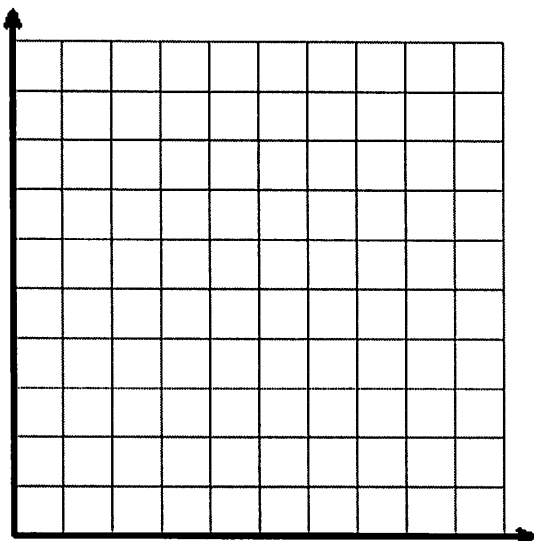


If we can say that a change in one group of data causes change in the other, the data can be described as **causal**.

Below is a list of Major League Baseball team's number of wins and average runs given up per game during the 2002 season.

Team	Wins	Runs Given Up
Anaheim	99	3.7
Arizona	98	3.9
Boston	93	3.8
Chicago	81	4.6
Cleveland	74	5.0
Houston	84	4.0

Team	Wins	Runs Given Up
Montreal	83	4.0
Pittsburgh	80	4.2
St. Louis	97	3.7
Seattle	82	4.1
Tampa Bay	62	5.2
Texas	72	5.2



1. Draw a **Best-Fit-Line**.

2. What type of correlation?

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3. Conclusion based on the graph?

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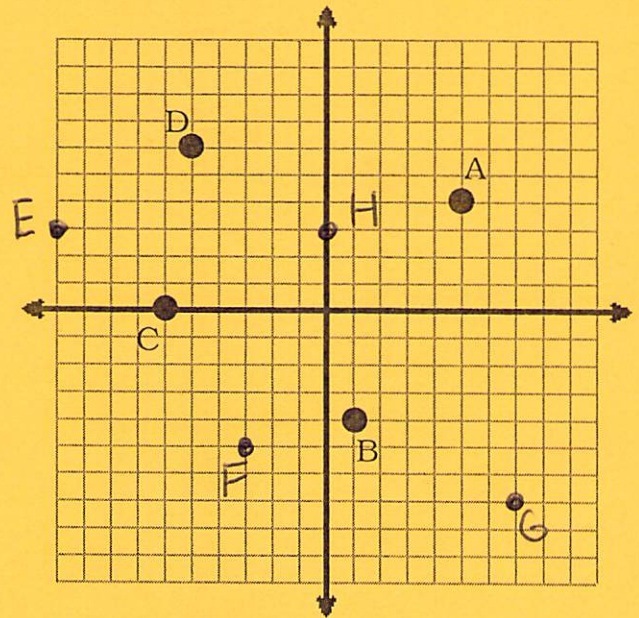
x y  
( -4 , 5 )

A ( 5 , 4 )      E ( -10 , 3 )

B ( 1 , -4 )      F ( -3 , -5 )

C ( -6 , 0 )      G ( 7 , -7 )

D ( -5 , 6 )      H ( 0 , 3 )

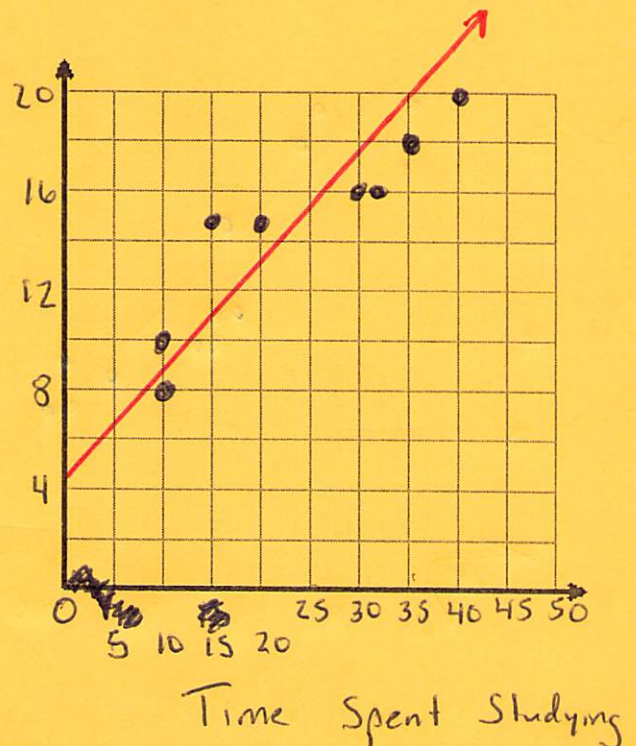


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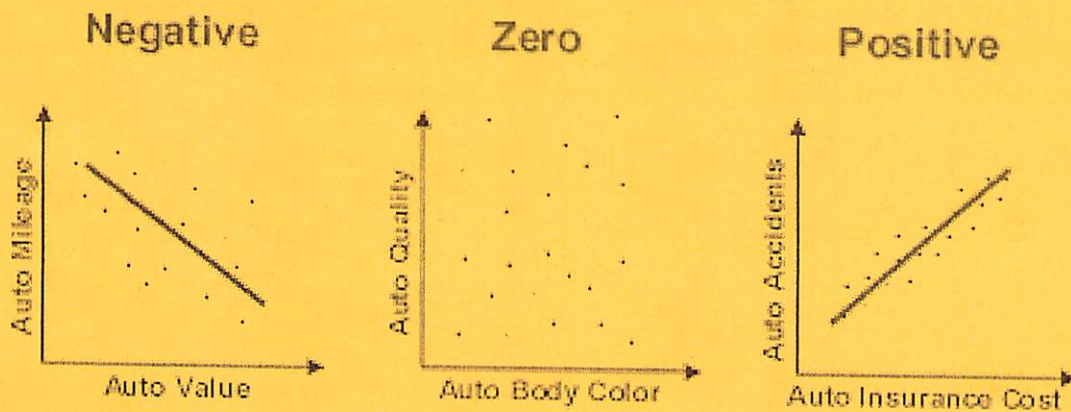
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Words Spelled Correctly



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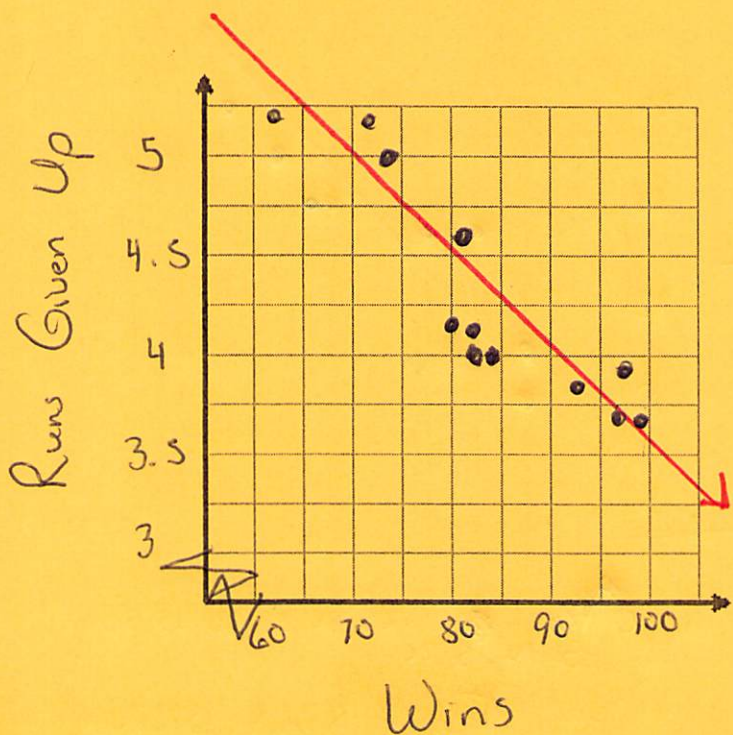


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1. Draw a **Best-Fit-Line**.

2. What type of correlation?

Negative

3. Conclusion based on the graph?

As wins increase  
the runs given up  
decreases