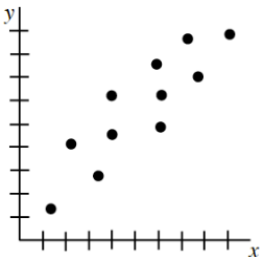
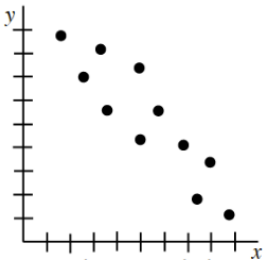
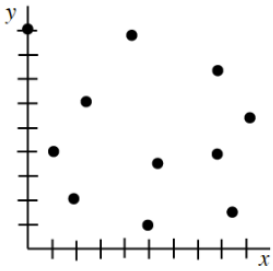
Scatterplot

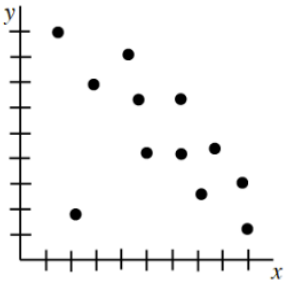
Direction of Association

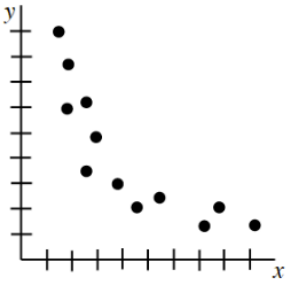


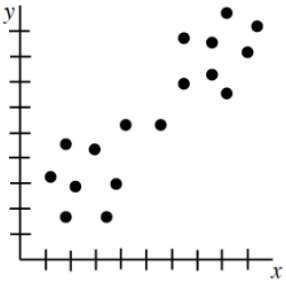




Form of Association

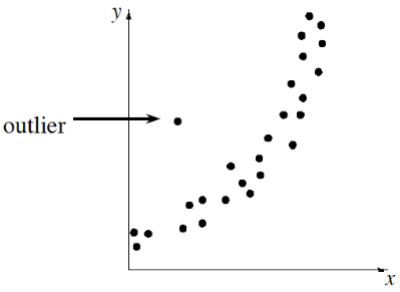






An **outlier** is a piece of data that does not fit into the pattern with the rest of the data. There is one obvious outlier in the association on the graph at the right.

There is also an outlier in one of the scatterplots above. Find it and label it outlier, like the one at the right is labeled.



Scatterplot

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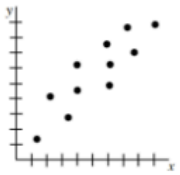

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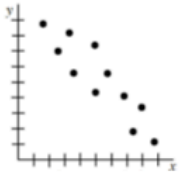

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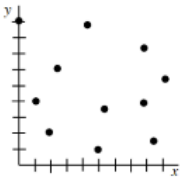

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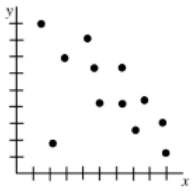
Form of Association



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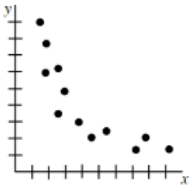

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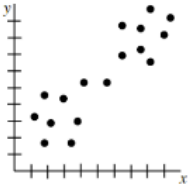

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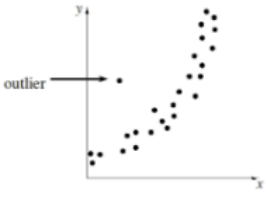

HOW MUCH IS THAT CAR?

Nate and Rick were discussing cars again. Nate claimed that cars with low odometer readings were more expensive than cars with higher odometer readings. His evidence was that his car with 23,000 miles was worth more than Rick's car with 31,000 miles. To investigate Nate's claim, the boys collected data from several car advertisements and found the information in the table at right.

Does the information in the table support Nate's claim? That is, do you believe Nate's claim that cars with a lower odometer reading cost more money?

Nate's Data from Car Ads

Odometer Reading (thousands of miles)	Price (thousand of $)
35	$38
55	$16
6	$50
28	$30
50	$26
31	$35
15	$28
99	$10
99	$13

- Set up a graph showing Odometer Reading on the x-axis and Price on the y-axis.
- Label equal intervals on each axis so that all of the data will fit on the graph.
- Plot the data points from problem

b. Describe the scatterplot you just created. What do you notice about how the points are placed on the graph? Do you see any patterns?

c. Place an additional point on your graph for Nate's car that has an odometer reading of 23,000 miles. Explain your strategy for deciding where to put the point.

d. When a relationship exists, one way to help show a trend in the data is to place a line or curve that, in general, represents where the data falls. This line, sometimes called a **line of best fit**, does not need to touch any of the actual data points. Instead, it shows where the data generally falls. The line is a mathematical model of the data. Models of data help you describe the data more easily and help you make predictions for other cars with different mileages.
With your team, decide where a line of best fit could be placed that would best model the data points. Are there any limits to where your line makes sense?

e. Using the line of best fit, can you predict the price of a car with an odometer reading of 80,000 miles? If so, explain how the line of best fit helps. If not, explain why it is not helpful.

f. Based on the scatterplot, would you agree with Nate's claim that cars with a higher odometer reading cost less? Use the scatterplot to justify your answer.