Lesson 9.1:

Scatter Plots

Key Idea

Scatter Plot

A **scatter plot** is a graph that shows the relationship between two data sets. The two sets of data are graphed as ordered pairs in a coordinate plane.

Ordered pairs are written as (x, y). The x is the horizontal point and the y is the vertical. The scales along the axes must be consistent.

1. The table shows the average price (in dollars) of sweatshirts sold at different stores and the number of sweatshirts sold at each store in one month.

Average Price	25	38	32	35	50
Number Sold	150	90	142	115	75

a. Write the ordered pairs from the table and plot them in a coordinate plane.

Which point should go first?

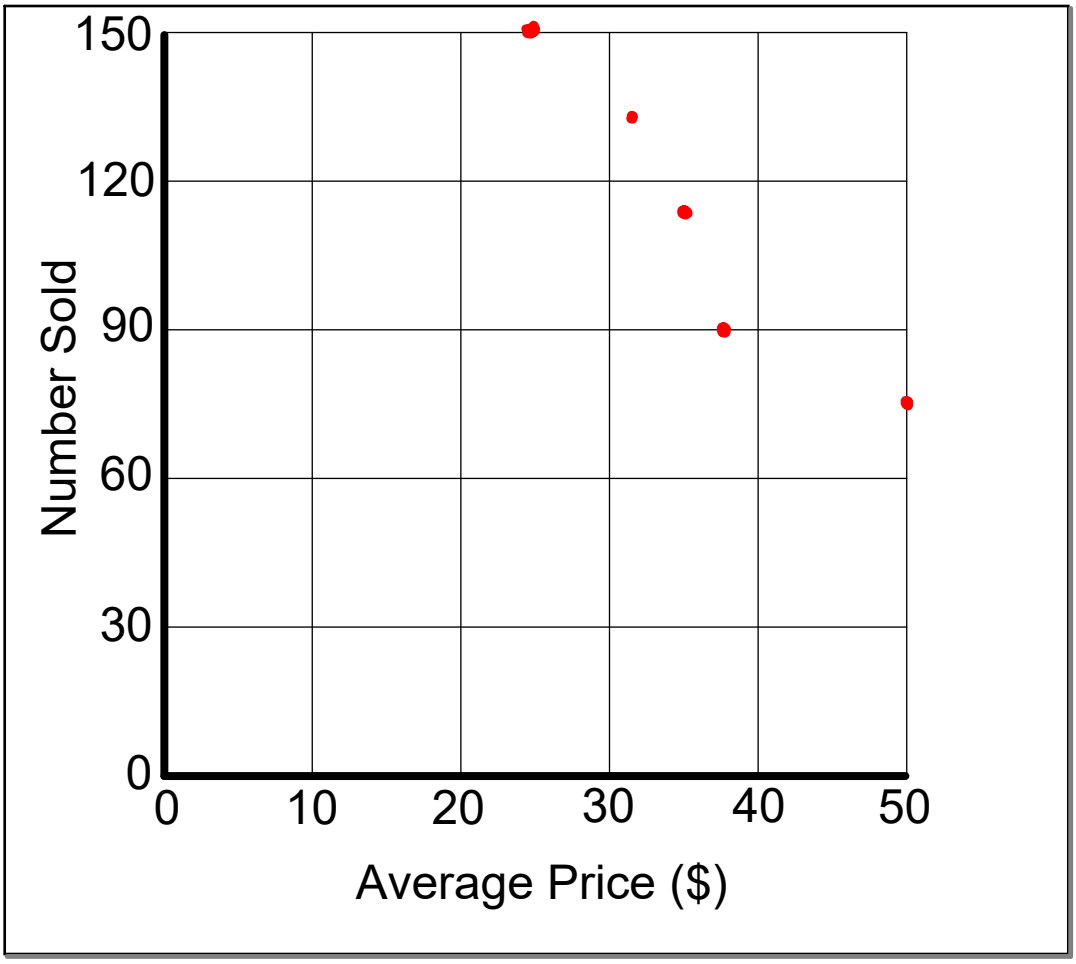
(Price, #) or (#, Price)?

b. Describe the relationship between the two data sets.

Positive

Negative *As the x increases, the y decreases*

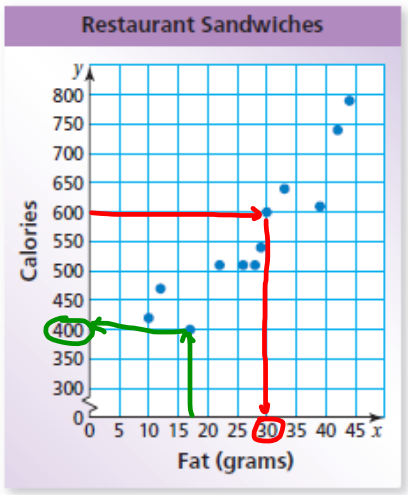
No correlation



The scatter plot shows the amounts of fat (in grams) and the numbers of calories in 12 restaurant sandwiches.

a. How many calories are in the sandwich that contains 17 grams of fat?

400



b. How many grams of fat are in the sandwich that contains 600 calories?

30

c. What tends to happen to the number of calories as the number of grams of fat increases?

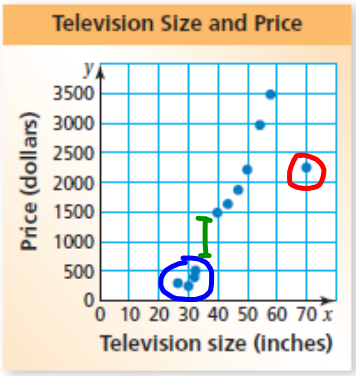
It increases (positive relationship/correlation)

1. WHAT IF? A sandwich has 650 calories. Based on the scatter plot in Example 1, how many grams of fat would you expect the sandwich to have? Explain your reasoning.

I would expect that sandwich to have between 35 and 40 grams of fat. There is no sandwich on the scatter plot that has 650 calories, but there is one with about 640 calories and 33 grams of fat. Because this scatter plot shows a positive correlation, I would expect the number of grams of fat for a 650 calorie sandwich would be more than 33.

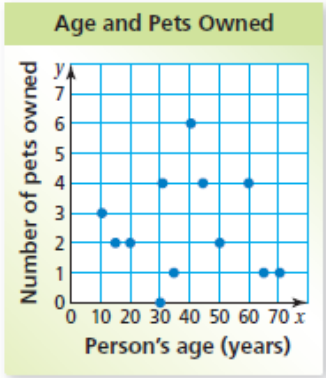
Describe the relationship between the data. Identify any outliers, gaps, or clusters.

a. television size and price



This graph shows a positive relationship. There is an outlier at (70, 2250), a gap between 500 and 1500, and a cluster below 500.

b. age and number of pets owned



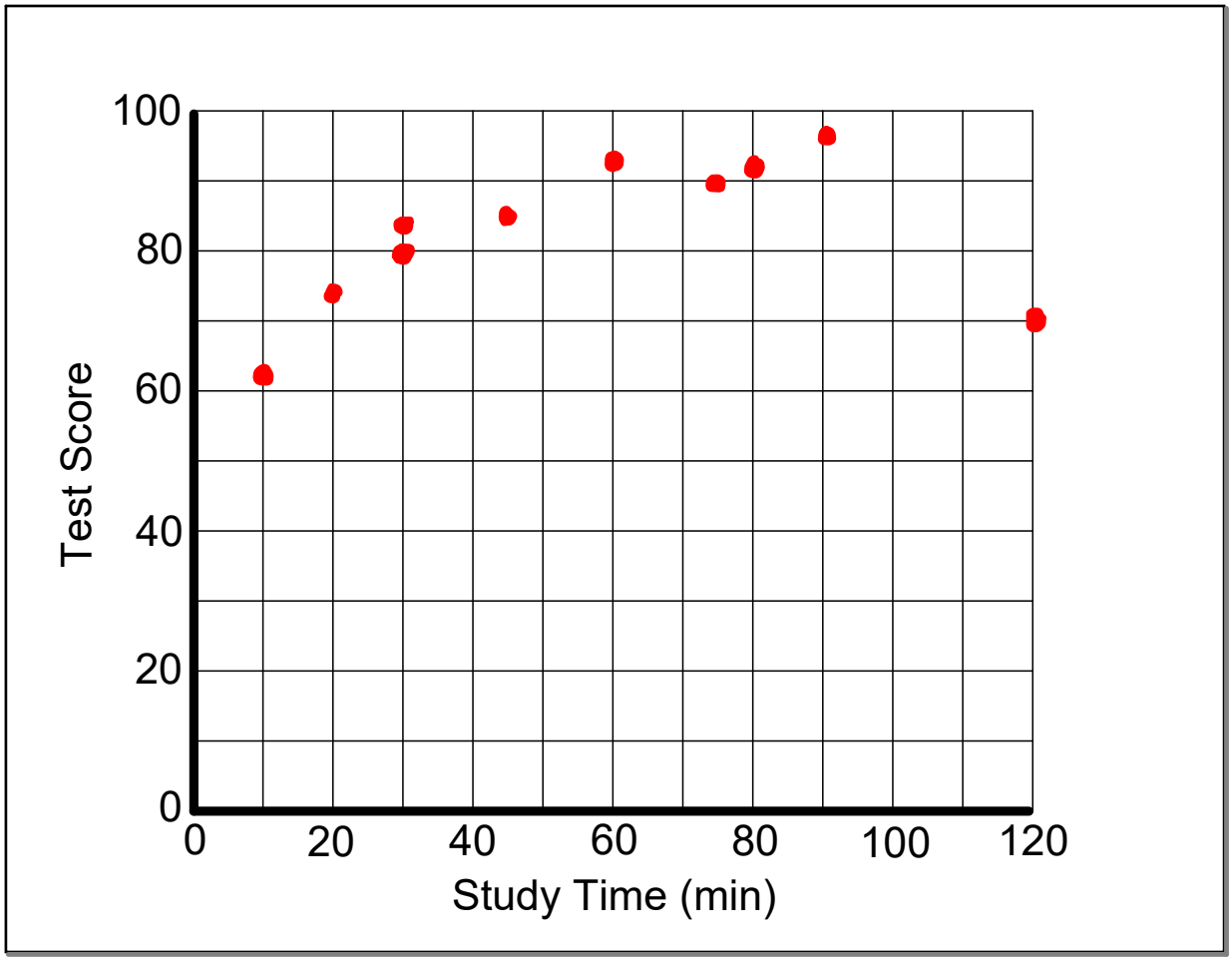
This graph shows no correlation. There are no obvious outliers, gaps, or clusters.

(Define gaps and clusters as they relate to the y coordinates)

2. Make a scatter plot of the data and describe the relationship between the data. Identify any outliers, gaps, or clusters.

Study Time (min), x	30	20	60	90	45	10	30	75	120	80
Test Score, y	80	74	92	97	85	62	83	90	70	91

The scatter plot shows a positive relationship. There is an outlier at (120,70) but no gaps or clusters.


100
80
60
40
20
0
Test Score
0
20
40
60
80
100
120
Study Time (min)