

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Scatter Plots Algebra (Grade 8)

### Key Idea

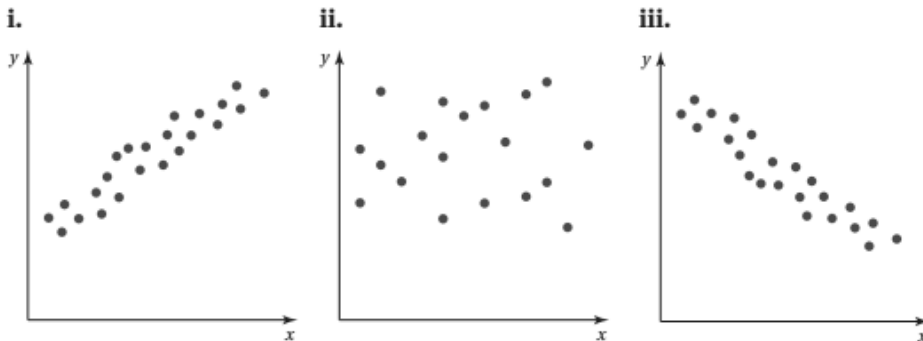
#### Scatter Plot

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.

#### Exercise #1:

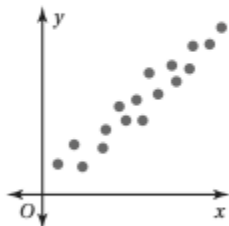
Work with a partner. Match the data sets with the most appropriate scatter plot. Explain your reasoning.

- month of birth and birth weight for infants at a day care
- quiz score and test score of each student in a class
- age and value of laptop computers



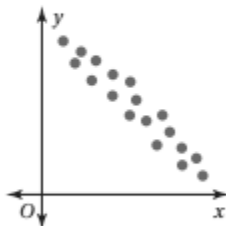
A scatter plot can show that a relationship exists between two data sets.

#### *Positive Linear Relationship*



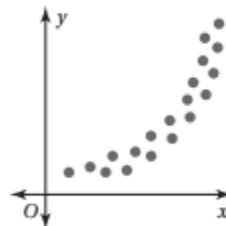
The points lie close to a line. As  $x$  increases,  $y$  increases.

#### *Negative Linear Relationship*



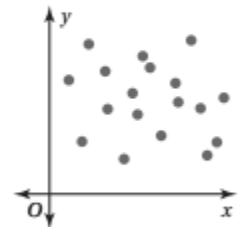
The points lie close to a line. As  $x$  increases,  $y$  decreases.

#### *Nonlinear Relationship*



The points lie in the shape of a curve.

#### *No Relationship*

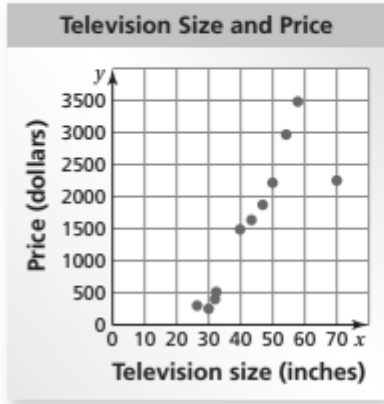


The points show no pattern.

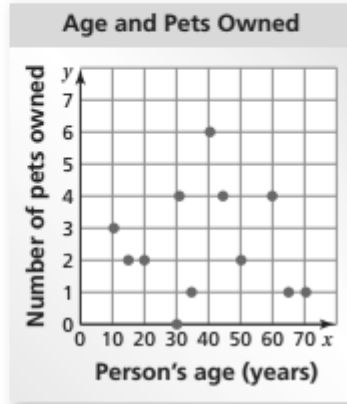
**Exercise #2:**

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

a. television size and price



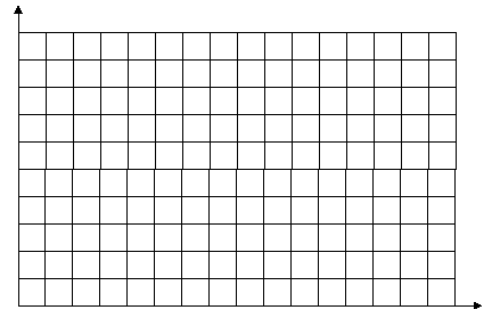
b. age and number of pets owned



**Exercise #3:**

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

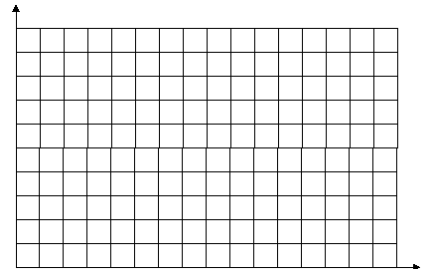


**Exercise #4:**

**JEANS** The table shows the average price (in dollars) of jeans sold at different stores and the number of pairs of jeans sold at each store in one month.

Average Price	22	40	28	35	46
Number Sold	152	94	134	110	81

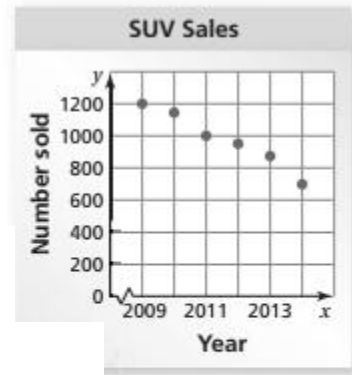
- Write the ordered pairs from the table and plot them in a coordinate plane.
- Describe the relationship between the two data sets.



**Exercise #5:**

**SUVS** The scatter plot shows the numbers of sport utility vehicles sold in a city from 2009 to 2014.

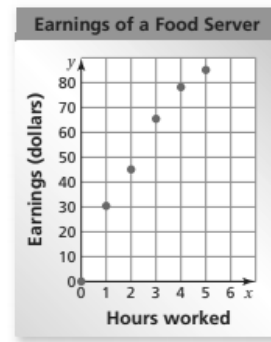
- In what year were 1000 SUVs sold?
- About how many SUVs were sold in 2013?
- Describe the relationship shown by the data.



**Exercise #6:**

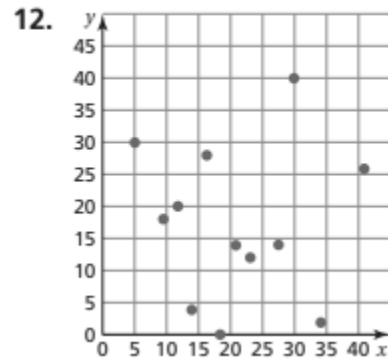
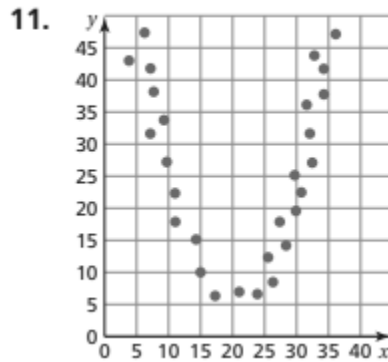
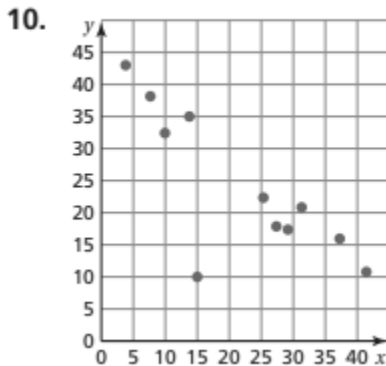
**EARNINGS** The scatter plot shows the total earnings (wages and tips) of a food server during one day.

- About how many hours must the server work to earn \$70?
- About how much did the server earn for 5 hours of work?
- Describe the relationship shown by the data.



**Exercise #7:**

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



**Exercise #8:**

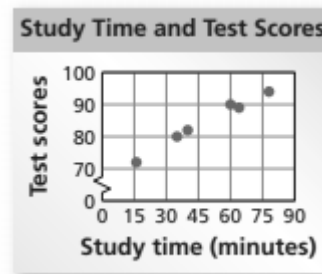
**HONEY** The table shows the average price per pound for honey in the United States from 2009 to 2012. What type of relationship do the data show?



Year, $x$	2009	2010	2011	2012
Average Price per Pound, $y$	\$4.65	\$4.85	\$5.15	\$5.53

**Exercise #9:**

**TEST SCORES** The scatter plot shows the numbers of minutes spent studying and the test scores for a science class. (a) What type of relationship do the data show? (b) Interpret the relationship.



**Exercise #10:**

**PROBLEM SOLVING** The table shows the memory capacities (in gigabytes) and prices (in dollars) of 7-inch tablet computers at a store. (a) Make a scatter plot of the data. Then describe the relationship between the data. (b) Identify any outliers, gaps, or clusters. Explain why you think they exist.

Memory (GB), $x$	8	16	4	32	4	16	4	8	16	8	16	8
Price (dollars), $y$	200	230	120	250	100	200	90	160	150	180	220	150

