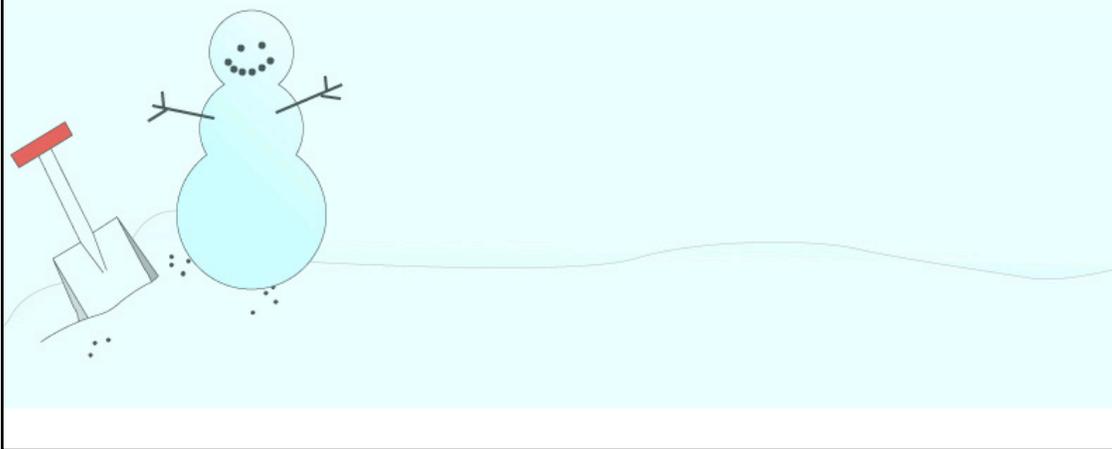


Algebra I

Lesson 5-7

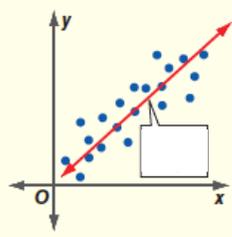
- I can interpret points on a scatter plot.
- I can write equations for lines of fit.



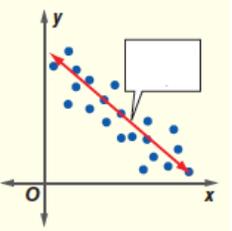
A Scatter plot is a graph in which two sets of data are plotted as ordered pairs in a coordinate plane. They are used to investigate a relationship or correlation between two quantities.

↳ (x, y)

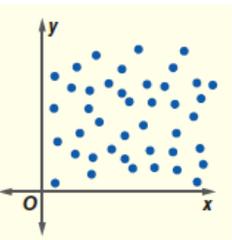
If the pattern in a scatter plot is linear, you can draw a line to summarize the data. This can help identify trends in the data.



positive correlation
between x and y
as x increases, y increases



negative correlation
between x and y
as x increases, y decreases

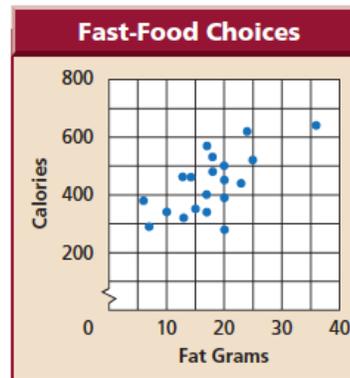


no correlation
between x and y
 x and y are not related

Identifying correlations and their meaning.

The graph shows fat grams and Calories for selected choices at a fast-food restaurant.

positive correlation
As the amount of fat
grams increase, the
number of Calories increases

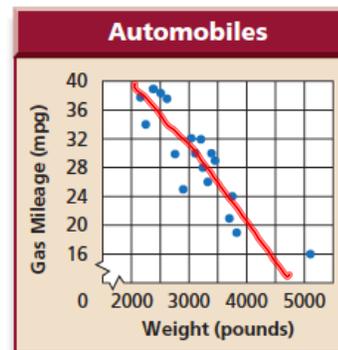


Source: Olen Publishing Co.

The graph shows the weight and the highway gas mileage of selected cars.

negative correlation

As the weight of a car increases, the gas mileage decreases



If the data points do not all lie on a line, but are close to a line, you can draw a line of fit. This line describes the trend of the data. Once you have a line of fit, you can find an equation of the line.

**Graphing calculators use a statistical method to find the line that most closely approximates the data. This line is called the best-fit line.

The number of bald eagle pairs in Iowa for certain years since 1990.

Years since 1990	2	4	6	8	10
Bald Eagle Pairs	17	32	47	83	100

Source: US Fish and Wildlife Service

positive correlation

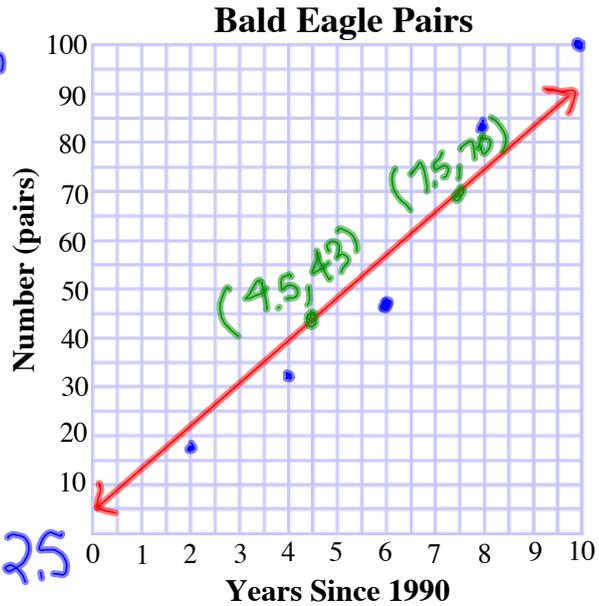
$$m = \frac{70 - 43}{7.5 - 4.5} = \frac{27}{3} = 9$$

$$y = mx + b$$

$$70 = 9(7.5) + b$$

$$70 = 67.5 + b$$

$$b = 2.5 \quad y = 9x + 2.5$$

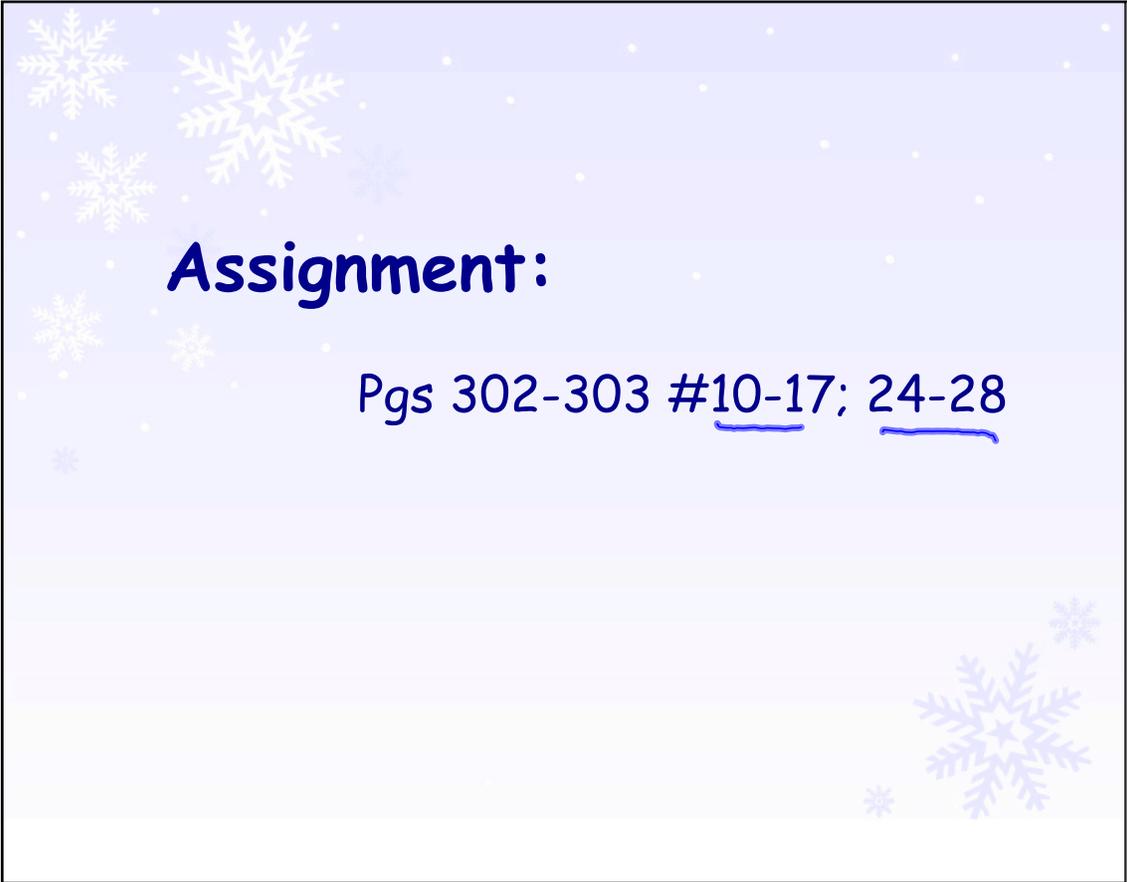


Bald Eagle example in textbook....



A linear equation can be used to predict values that are inside the range of the data. This is called _____.

Use the equation for the line of fit in the previous example to estimate the number of bald eagle pairs in Iowa in 1999.



Assignment:

Pgs 302-303 #10-17; 24-28