



### Drawing Lines of Best Fit (page 1)

When data is collected, the points graphed do not always form a straight line. However, they often approximate a line. A **line of best fit** is a line that models the trend of most of the data points (hence, also referred to as a **trend line**). To approximate this line, graph a line such that half of the points are above the line and half of the points are below the line.

**Example:** The scatter plots to the right display the same data about the ages of eight health club members and their heart rates during exercises.

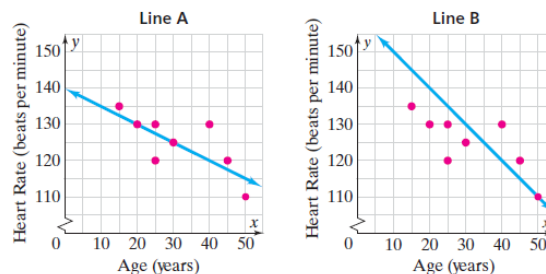
Which line is a better fit for the data? Line A would be the

better fit as it more closely models the trend of the data.

Identify two points on the line; find slope. (20, 130) and

(30, 125); slope is  $\frac{130-125}{20-30} = \frac{5}{-10} = -\frac{1}{2}$

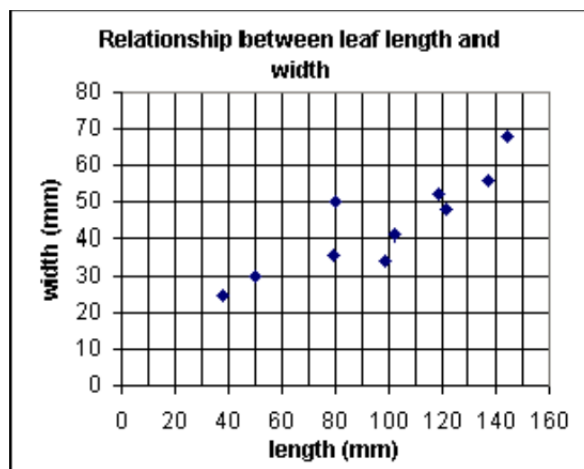
Write a sentence that gives a general description of the situation. As a person ages, their heart rate (beats per minute) decreases.



**Example:** The length and width of 10 leaves are shown on the scatter plot.

- Draw a line of best fit.
- Identify two points on your line and determine the slope.

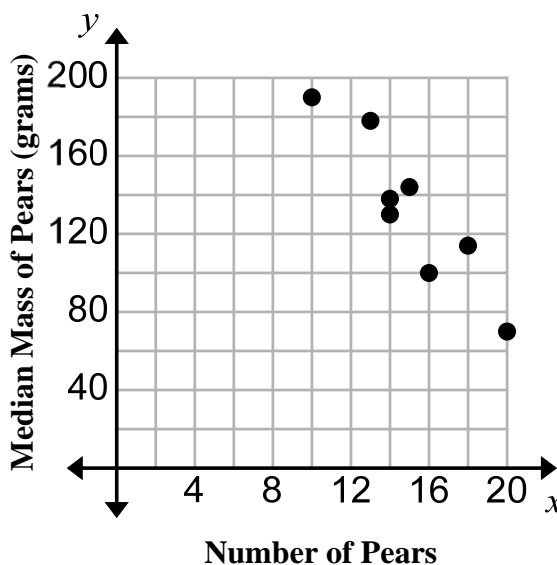
c) Write a sentence describing the general relationship.



**Example:** Maria is investigating the sizes of pears in 2 kg bags. Her results are shown in the scatter plot.

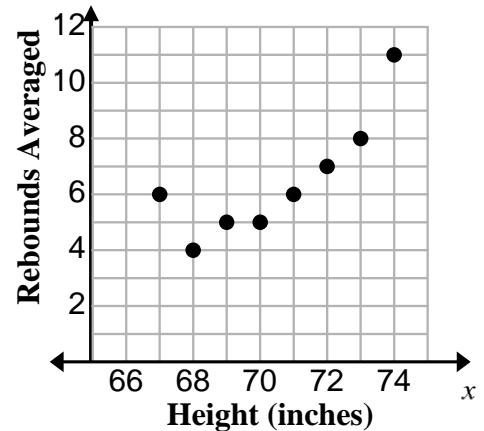
- Draw a line of best fit.
- Identify two points on your line and determine the slope.

c) Write a sentence describing the general relationship.



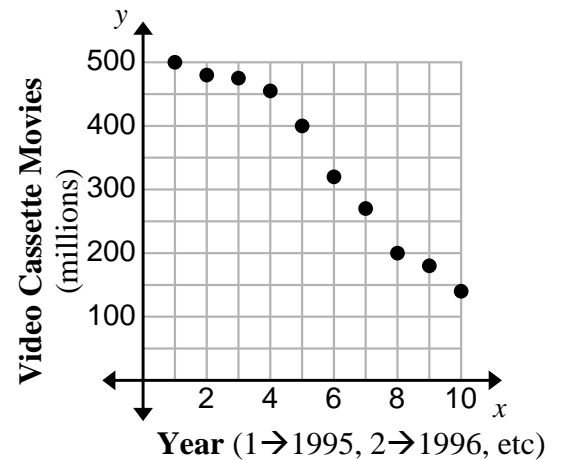
## Drawing Lines of Best Fit (page 2)

1. To the right is a scatter plot of data comparing the height of basketball players to the number of rebounds each player averaged over the course of a season.
  - a) Draw a line of best fit.
  - b) Identify two points on your line and determine the slope.



- c) Write a sentence describing the general relationship.

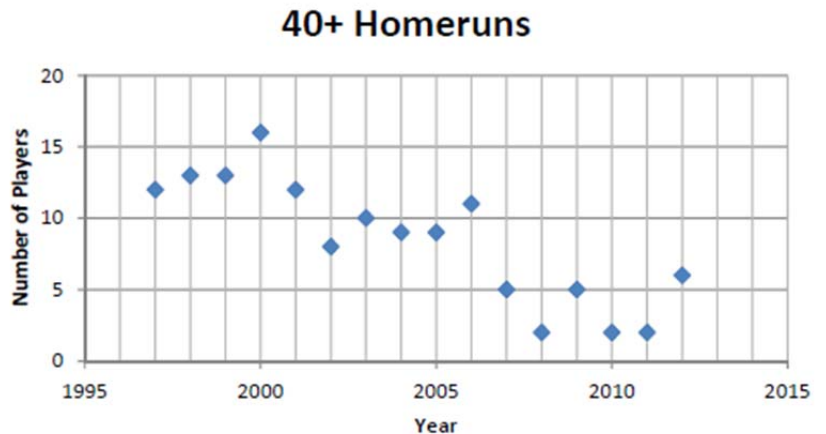
2. To the right is a scatter plot showing the number of video cassette movies sold (in millions) from 1995 – 2004.
  - a) Draw a line of best fit.
  - b) Identify two points on your line and determine the slope.



- c) Write a sentence describing the general relationship.

3. To the right is a scatter plot of data showing the number of players that hit 40 or more homeruns during the specified years.

- a) Draw a line of best fit.
- b) Identify two points on your line and determine the slope. (Hint: re-label the  $x$ -axis to Year 0, 1, 2 etc.)



- c) Write a sentence describing the general relationship.