



## Lines of Best Fit: Writing & Interpreting Equations #2 (page 1)

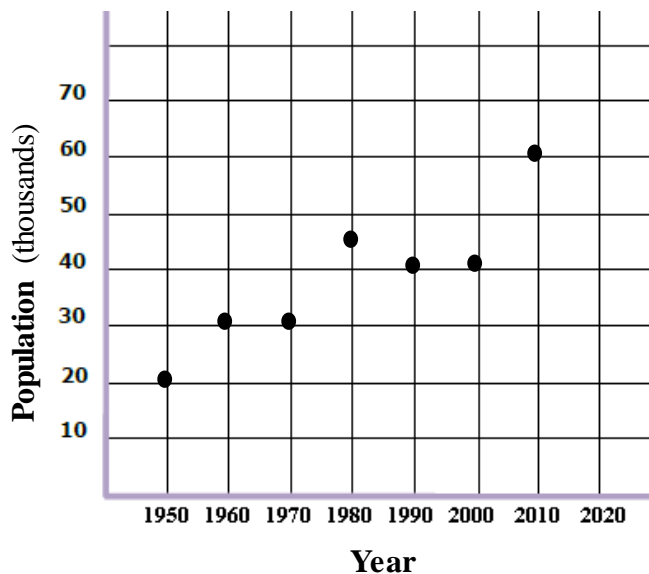
1. The table lists the population of a town from the year 1950 to 2010. A scatterplot of the data is also given.

Year	1950	1960	1970	1980	1990	2000	2010
Population (in thousands)	20	30	30	45	40	40	60

- a) Draw a line of best fit to model the data.
- b) What type of correlation does it show?
- c) Find an equation in slope-intercept form for the line. To do this,
  - First change your  $x$ -axis to represent year 0, 10, 20 etc.

Year	10	20					
Population	20	30	30	45	40	40	60

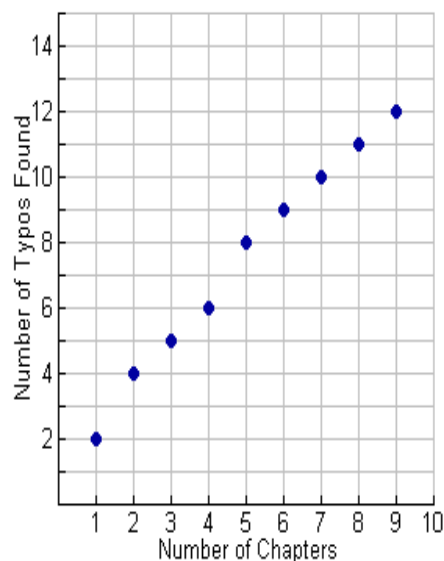
- Choose 2 points: ( , ) ( , )
- Slope =  $\frac{\text{rise}}{\text{run}} =$
- Plug in  $(x, y)$  you used to find slope and  $m$  (slope) to solve for the  $y$ -intercept,  $b$ .
- Now write the linear equation using  $m$  and  $b$ ,  $y = mx + b$ !



2. The scatterplot of data below is comparing the number of chapters in a textbook to the number of typos found within the book.

- a) Draw a line of best fit to model the data.
- b) Write an equation in slope-intercept form for your line of best fit.

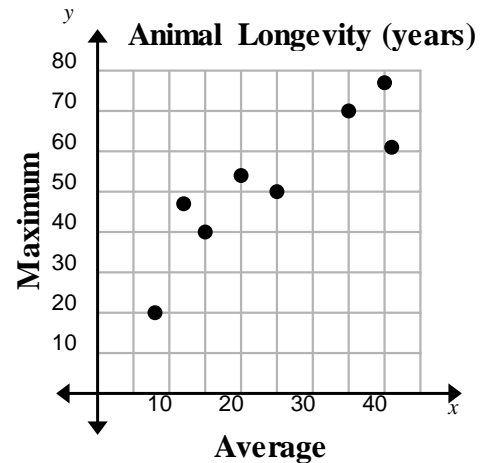
- c) What is the slope of the graph?
- d) What does the slope of the line mean in context to this situation?



## Lines of Best Fit: Writing & Interpreting Equations #2 (page 2)

**3. The scatter plot shows the average and maximum longevity of various animals in captivity.**

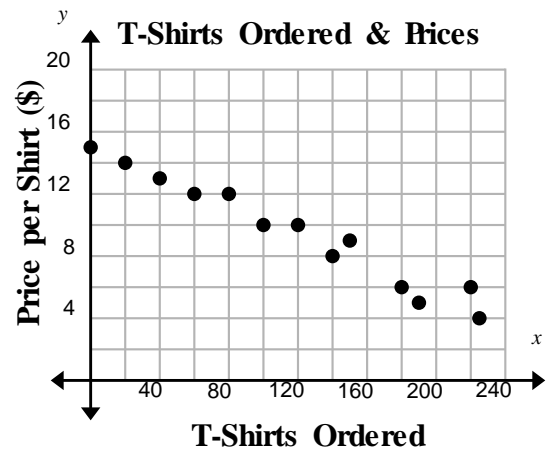
- Draw a line of best fit to model the data.
- Write an equation in slope-intercept form for your line of best fit.



- What is the slope of the graph?
  - What does the slope of the line mean in context to this situation?
- e) Predict the maximum longevity for an animal with an average longevity of 33 years. Is this an example of extrapolation or interpolation?

**4. The scatter plot shows relationship between the number of t-shirts ordered and the individual price of each shirt.**

- Draw a line of best fit to model the data.
- Write an equation in slope-intercept form for your line of best fit.



- What is the slope of the graph?
  - What does the slope of the line mean in context to this situation?
- e) Predict the price per shirt for an order of 250 shirts. Is this an example of extrapolation or interpolation?