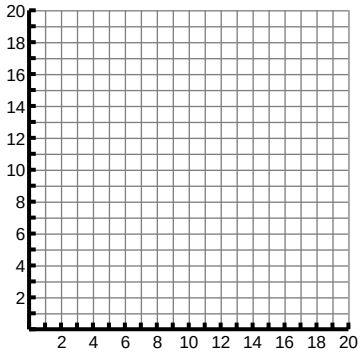
Homework 6.5 Line of Best Fit

The environment club is interested in the relationship between the number of canned beverages sold in the cafeteria and the number of cans that are recycled. The data they collected are listed in this chart.
Plot the points to make a scatter plot and draw the line of best fit.

Beverage Can Recycling								
Number of Canned Beverages Sold	18	15	19	8	10	13	9	14
Number of Cans Recycled	8	6	10	6	3	7	5	4

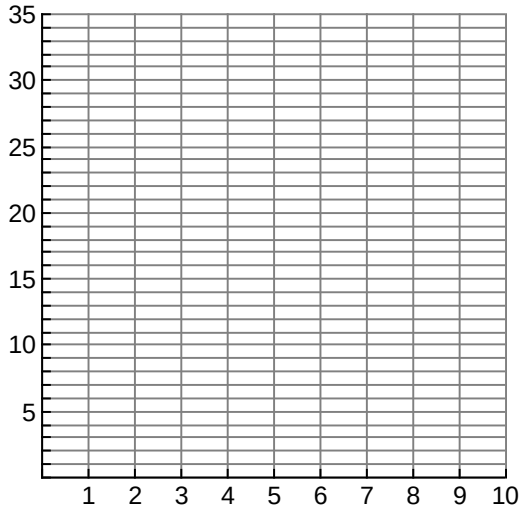


1. Find an equation of the line of best fit for the data using **calculator**.

Mike is riding his bike home from his grandmother's house. In the table below, x represents the number of hours Mike has been biking and y represents the number of miles Mike is away from home. Make a scatter plot for this data on the grid below.

Hours (x)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Miles (y)	35	29	26	20	16	9	6	0

Describe the association between the data points on the scatter plot.
Draw the line of best fit.



2. Find an equation of the line of best fit for the data using **calculator**.

3. What does the slope represent in the context of the problem? What does the y-intercept represent in the context of the problem?

4. Could you use your equation to predict how far Mike would be after 10 hours? Use mathematics to justify your answer.

Use the table below to answer the questions about the population p (in millions) in Florida.

Year, t	**2002**	**2003**	**2004**	**2005**
Population(millions)	16.4	17.0	17.4	17.8

5. Using this model, what will be the population in 2020? *Hint: You must get the equation of the line of best fit first by using the calculator.

Use the table below to answer the questions about the U.S. residential carbon dioxide emissions from 1993 to 2002. Emissions are measured in million metric tons.

Year, t	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**
Emissions	1027.6	1020.9	1026.5	1086.1	1077.5	1083.3	1107.1	1170.4	1163.3	1193.9

6. Using this model, how many residential tons were emitted in 1990? In 2010? *Hint: You must get the equation of the line of best fit first by using the calculator.

Use the table below to answer the questions about the operating costs in thousands of a small business from 2000 to 2007.

Year, t	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Operating Costs	2.3	2.6	3.1	3.3	4.0	5.2	5.9	7.0

7. Using this model, what will be the operating costs in 2015?