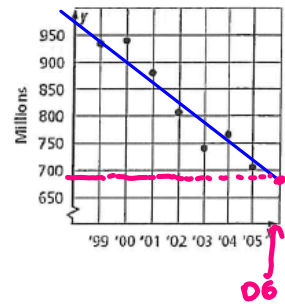


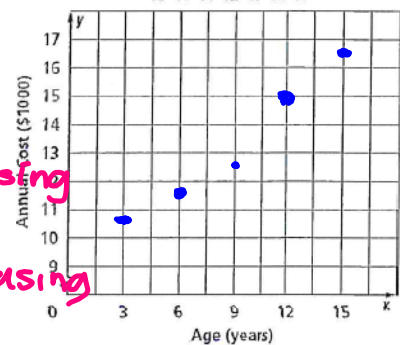
1. **MUSIC** The scatter plot shows the number of CDs (in millions) that were sold from 1999 to 2005. If the trend continued, about how many CDs were sold in 2006?

685 million



2. **FAMILY** The table below shows the predicted annual cost for a middle income family to raise a child from birth until adulthood. Draw a scatter plot and describe what relationship exists within the data.

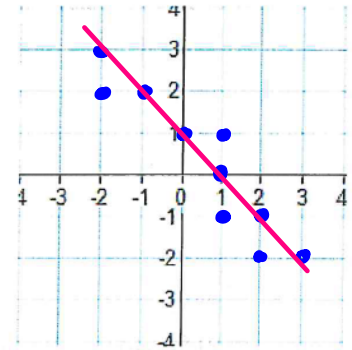
Cost of Raising a Child Born in 2003					
Child's Age	3	6	9	12	15
Annual Cost (\$)	10,700	11,700	12,600	15,000	16,700



As a child gets older, the more money it takes to raise him/her.

3. Make a scatter plot of the data in the table. Draw a line of best fit. What is the equation of the line of best fit?

X	-2	-2	-1	0	1	1	1	2	2	3
Y	2	3	2	1	0	1	-1	-1	-2	-2



$(0, 1)$ $(1, 0)$

$$m = \frac{0 - 1}{1 - 0} = \frac{-1}{1} = -1$$

$$y - y_1 = m(x - x_1)$$

$$y - 0 = -1(x - 1)$$

$$y = -x + 1$$

5. **BASEBALL** The scatter plot shows the average price of a major-league baseball ticket from 1997 to 2006.

- a. Use the points (2001, 17.60) and (2002, 18.75) to write the slope-intercept form of equation for the line of fit shown in the scatter plot.

x_1, y_1 x_2, y_2

$$m = \frac{18.75 - 17.60}{2002 - 2001} = \frac{1.15}{1} = 1.15$$

$$y - 17.60 = 1.15(x - 2001)$$

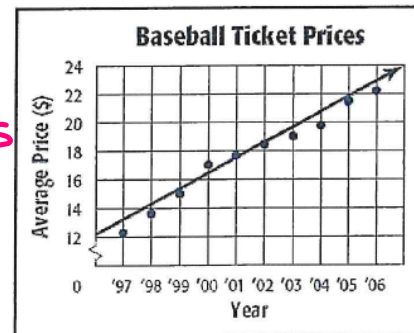
$$y - 17.60 = 1.15x - 2301.15$$

$$y = 1.15x - 2283.55$$

- b. Use your equation to tell the price of a ticket in 2009. Is this extrapolation or interpolation?

$$y = 1.15(2009) - 2283.55$$

$$y = \$26.80$$



Source: Team Marketing Report, Chicago

6. DISEASE The table shows the number of cases of Foodborne Botulism in the United States for the years 2001 to 2005.

a. Draw a scatter plot and determine, what relationship, if any, exists in the data.

As the years increase, the number of cases decreases.

b. Draw a line of fit for the scatter plot, and write the slope-intercept form of an equation for the line of fit.

$$(2001, 39) \quad (2005, 18)$$

$$m = \frac{18 - 39}{2005 - 2001} = \frac{-21}{4}$$

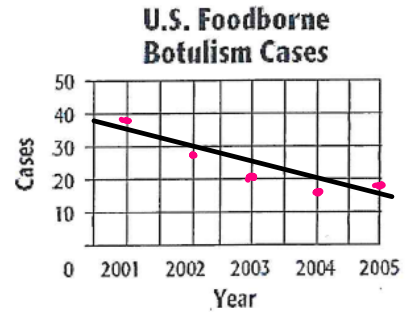
$$y - 39 = -\frac{21}{4}(x - 2001)$$

$$y - 39 = -\frac{21}{4}x + \frac{42021}{4}$$

$$\begin{array}{r} +39 \qquad \qquad \qquad +39 \\ \hline y = -\frac{21}{4}x + \frac{42177}{4} \end{array}$$

$$\text{or} \\ y = -5.25x + 10544.25$$

U.S. Foodborne Botulism Cases					
Year	2001	2002	2003	2004	2005
Cases	39	28	20	16	18



7. ZOOS The table shows the average and maximum longevity of various animals in captivity.

a. Draw a scatter plot and determine, what relationship, if any, exists in the data.

b. Draw a line of fit for the scatter plot, and write the slope-intercept form of an equation for the line of fit.

$$(15, 40) \quad (35, 70)$$

$$m = \frac{30}{20} = \frac{3}{2} \text{ or } 1.5$$

$$y - 40 = 1.5(x - 15)$$

$$y - 40 = 1.5x - 22.5 \rightarrow \boxed{y = 1.5x + 17.5}$$

c. Predict the maximum longevity for an animal with an average longevity of 33 years. Is this an example of Extrapolation or Interpolation? \swarrow x

$$y = 1.5(33) + 17.5$$

$$y = 67$$

67 years

Longevity (years)								
Avg.	12	25	15	8	35	40	41	20
Max.	47	50	40	20	70	77	61	54

