

Algebra I

Notes Section 4.6

Fit a Line to Data

Big Ideas

1. How to determine if a scatter plot shows positive, negative or no correlation in the data.
2. How to find the line of best fit.
3. How to use the relationship between the dependent and independent variables to determine the correlation of the data.

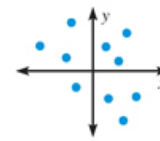
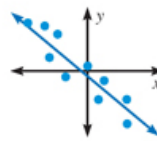
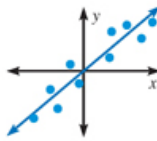
VOCABULARY

Scatter Plot: _____

Positive Correlation: _____

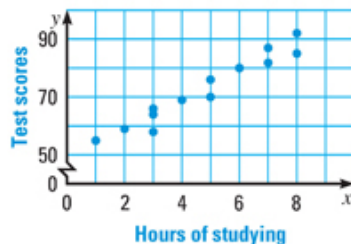
Negative Correlation: _____

No Correlation: _____

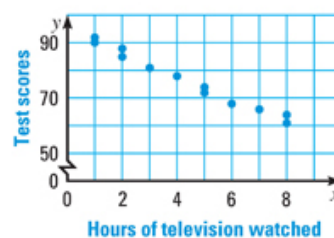


EXAMPLE 1 Describe the correlation of the data graphed in the scatter plot.

a)

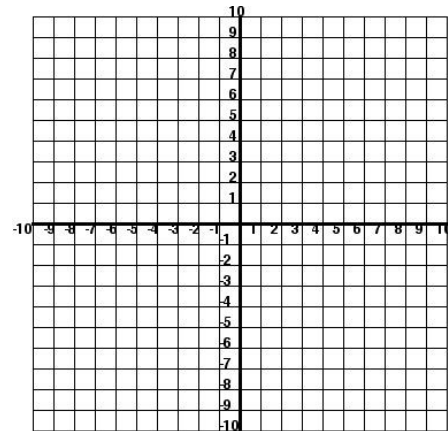


b)



EXAMPLE 2 The table shows the length (in cm) and swimming speeds (in cm/second) of six fish.

Fish	Pike	Red gurnard	Black bass	Gurnard	Norway haddock
Length (cm)	37.8	19.2	21.3	26.2	26.8
Speed (cm/sec)	148	47	88	131	98

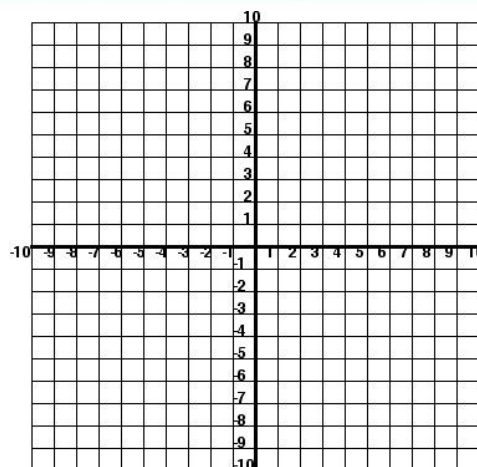


- a) Make a scatter plot of the data.
- b) Describe the correlation of the data.

Line of Best Fit: _____

EXAMPLE 3 The table show the number of active red woodpecker clusters in a part of the De Soto National Forest in Mississippi. Write an equation that models the number of active clusters as a function of the number of years since 1990.

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000
Active clusters	22	24	27	27	34	40	42	45	51



Step 1: Make a scatter plot

Step 2: Draw a line of best fit

Step 3: Identify 2 points on the line. _____

Step 4: Find the slope and y-intercept. _____

Step 5: Write the equation. _____

EXAMPLE 4 Refer to the model for the number of woodpecker clusters in Example 3.

a) Describe the domain and range.

D: _____ R: _____

Hint Sub Domain into Line of Best Fit to find Range

b) At about what rate(slope) did the number of active woodpecker clusters change during the period 1992-2000?
