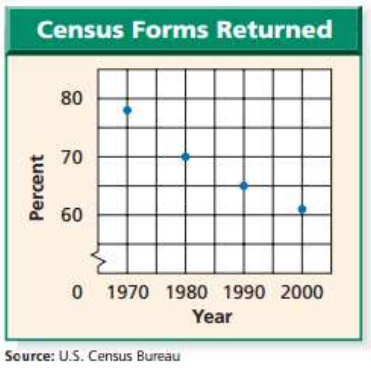
Scatter Plots and Lines of Fit Name:_____

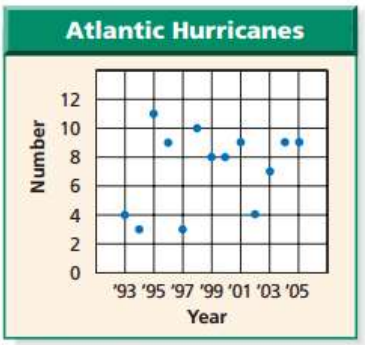
Determine whether each graph shows a *positive correlation*, a *negative correlation*, or *no correlation*. If there is a positive or a negative correlation, describe its meaning in the situation.

1.



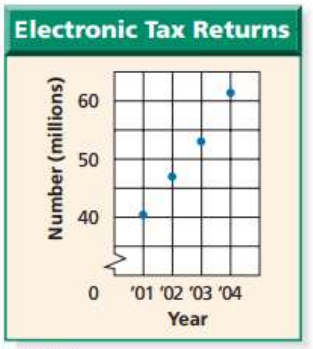
Source: U.S. Census Bureau

2.



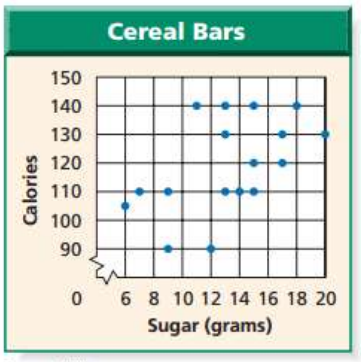
Source: *USA TODAY*

3.



Source: IRS

4.



Source: *Vitality*

Hydrocarbons like methane, ethane, propane, and butane are composed of only carbon and hydrogen atoms. The table gives the number of carbon atoms and the boiling points for several hydrocarbons.

Hydrocarbons			
Name	Formula	Number of Carbon Atoms	Boiling Point (°C)
Ethane	C_2H_6	2	−89
Propane	C_3H_8	3	−42
Butane	C_4H_{10}	4	−1
Hexane	C_6H_{12}	6	69
Octane	C_8H_{18}	8	126

5. Draw a scatter plot comparing the number of carbon atoms to the boiling points.

6. Draw a line of fit for the data.
7. Describe the correlation of the data.

8. Write the slope-intercept form of an equation for the line of fit.

9. Predict the boiling point for methane (CH_4), which has 1 carbon atom.

10. Predict the boiling point for pentane (C_5H_{12}), which has 5 carbon atoms.

11. The boiling point of heptane is 98.4°C. Use the equation of the line of fit to predict the number of carbon atoms in heptane.

Scatter Plots and Lines of Fit Name:_____

Use the table that shows the amount the United States government has spent on space and other technologies in selected years.

Federal Spending on Space and Other Technologies									
Year	1980	1985	1990	1995	1996	1997	1998	1999	2004
Spending (billions of dollars)	4.5	6.6	11.6	12.6	12.7	13.1	12.9	12.4	15.4

Source: U.S. Office of Management and Budget

12. Draw a scatter plot to represent the data.

13. Draw a line of fit for the scatter plot.
14. Describe the correlation of the data.

15. Let x represent the number of years since 1980. Let y represent the spending in billions of dollars. Write the slope-intercept form of the equation for the line of fit.

16. Predict the amount that was spent on space and other technologies in 2005.

17. The government projects spending of $14.3 billion in space and other technologies in 2005. How does this compare to your prediction?