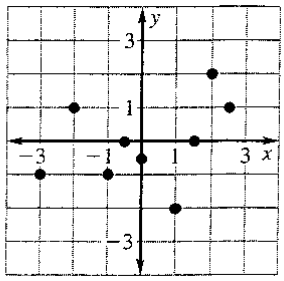
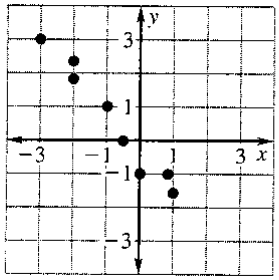
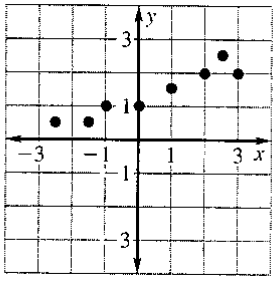
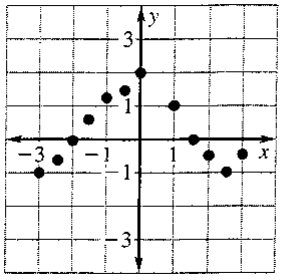
Algebra 1 Name: _____
Unit 5
Worksheet 8

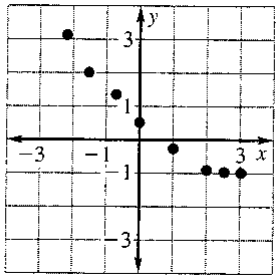
For each graph determine the type of correlation between the data sets. Indicate if it is positive, negative or no correlation.

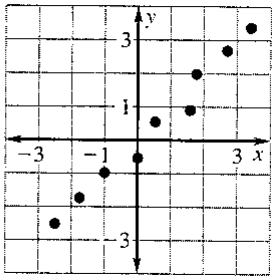
1. 

2. 

3. 

4. 

5. 

6. 

Would you expect a positive correlation, a negative correlation, or no correlation between the two data sets?

7. Air pollution Levels vs. Number of Cars on the Road

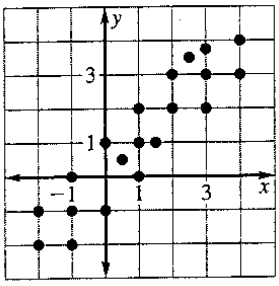
8. Cost of a Pair of Sneakers vs. Sneakers Color

9. Number of Calories Burned vs. Time Exercising

10. Number of Gallons of Heating Oil Consumed vs. Average Daily Temperature

11. How Much Money You Earn vs. The Size of Your Home

Looking at your graph draw the line of best fit and then choose the equation that **best** represents that line.

12. 

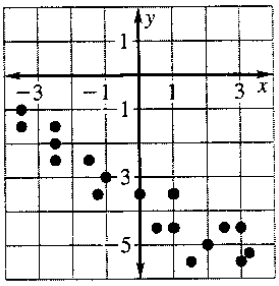
a) $y = -x + 1$

b) $y = 2x + 5$

c) $y = x$

d) $y = -x$

e) no correlation

13. 

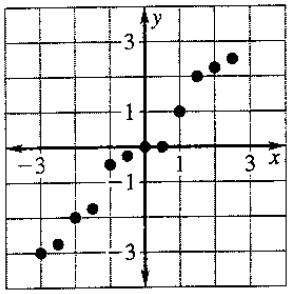
a) $y = -x + \frac{7}{2}$

b) $y = 2x - \frac{5}{2}$

c) $y = x - \frac{5}{2}$

d) $y = -2x - \frac{7}{2}$

e) no correlation

14. 

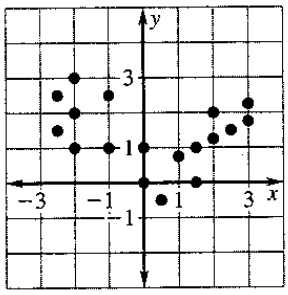
a) $y = x$

b) $y = 2x - 1$

c) $y = -x$

d) $y = -x + 1$

e) no correlation

15. 

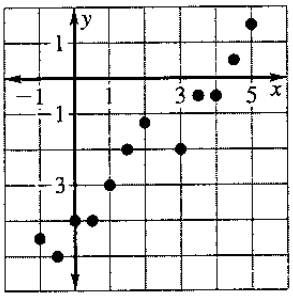
a) $y = x - \frac{5}{2}$

b) $y = x$

c) $y = x + 1$

d) $y = 2x + 2$

e) no correlation

16. 

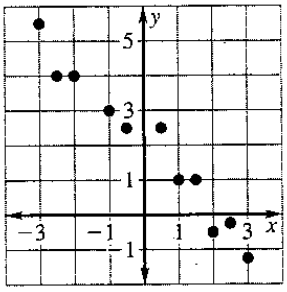
a) $y = x - 4$

b) $y = \frac{1}{4}x - 3$

c) $y = -2x + 3$

d) $y = -\frac{1}{3}x - 4$

e) no correlation

17. 

a) $y = 2x + 2$

b) $y = -2x + 2$

c) $y = \frac{1}{2}x - 1$

d) $y = -2x + 4$

e) no correlation

18. Explain the difference between linear interpolation and linear extrapolation.

19. Let $y = 55x + 126$ represent the amount of money (in dollars) in your savings account from 1988 to 1998. Let x represent the number of years since 1988.

    a. Predict the amount of money in your savings account for 1992.

    b. Did you use linear interpolation or linear extrapolation?

    c. Predict the amount of money in your savings account for 2000.

    d. Did you use linear interpolation or linear extrapolation?

20. Let $y = 0.25x + 4$ represent the cost of going to the movie from 1985 to 1995. Let x represent the number of years since 1985.

    a. Predict the cost of going to a movie in 1997.

    b. Did you use linear interpolation or linear extrapolation?

    c. Predict the cost of going to a movie in 1991.

    d. Did you use linear interpolation or linear extrapolation?

21. Use the table, which shows the number of pounds of skim milk, y , consumed per person in the United States in year x. Let x represent the number of years since 1980.

x	y
1980	26.9
1985	27.4
1990	42.8
1992	46.2
1995	53.9
1996	55.7

a. Use the model y = 2x + 23 to estimate the number of pounds consumed in 1994. Is this linear interpolation or linear extrapolation?

b. Use the model y = 2x + 23 to estimate the number of pounds consumed in 1999. Is this linear interpolation or linear extrapolation?

22. Write PSF and SIF given the following information:

a) (2, -8) and (5, 6)

b) Parallel to the line $y = \frac{1}{2}x - 10$ through (-4, 8)

c) Perpendicular to y – 2 = -4(x + 10) through (4, -12)