Chapter 4

Write the following formulas

1. Slope
2. Point Slope Form
3. Slope Intercept Form

Write an equation in point-slope form of the line that passes through the given points.

7. $(4, 1), (-2, 7)$ **8.** $(1, 3), (-3, 0)$ **9.** $(-2, -5), (4, -1)$

Write a linear function (slope intercept) *f* with the given values.

10. $f(0) = 2, f(3) = -1$ **11.** $f(-4) = -5, f(2) = -3$

12. To rent office space for your business, you must pay a one-time fee of $1000 and pay rent of $800 per month.

a. Write a linear model that represents the total cost of renting office space as a function of the number of months you will rent.

b. Find the total cost of renting office space for one year.

c. A different building has office space for rent that does not require a one-time fee, but you must pay rent of $900 per month. If you have $15,000, at which building can you rent office space for the greatest amount of time? Explain.

13. The table shows the distance covered by a spaceship in outer space. Can the situation be modeled by a linear equation? Explain. If possible, write a linear model that represents the distance traveled as a function

Time (seconds)	1	4	7	10	13
Distance (miles)	5	20	35	50	65

Write the slope-intercept form of the equation with the given characteristics.

14. slope $= \frac{2}{5}$; passes through $(-3, 1)$

15. passes through $(3, 5)$ and $(-1, 5)$

16. slope $= \frac{1}{2}$; x-intercept $= 3$

17. slope $= -3$; passes through $(4, -7)$

Determine if the sequence is arithmetic. If so, find the common difference.

18. $-3, -1, 3, 5, \ldots$

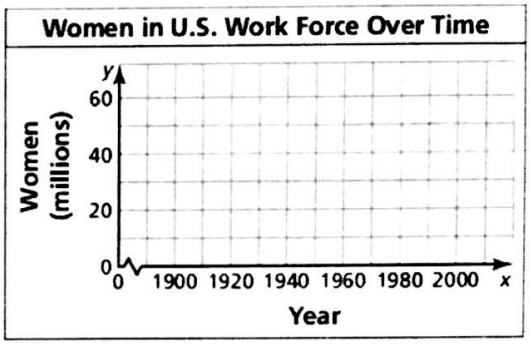
19. $-1, -7, -13, -19, \ldots$

20. $-\frac{1}{6}, \frac{1}{6}, \frac{1}{2}, \frac{5}{6}, \ldots$

21. $-1.2, -0.1, 0.8, 1.7, \ldots$

22. The table shows the number of women (in millions) in the U.S. work force at various times during the past century.

Year, x	1900	1920	1930	1950	1970	1990
Number, y	5	8	10	16	31	57



a. Make a scatter plot of the data. Describe the correlation.

b. Find an equation of the line of best fit.

c. Determine the number of women in the workforce in the year 2005.

d. Estimate the correlation coefficient.

Tell whether a correlation is likely in the situation. Explain your reasoning.

23. the amount of gas in a car's tank and the number of miles driven

24. the height of a person and the length of the person's hair