REVIEW WORKSHEET 2.1-2.6

YOU MUST SHOW ALL WORK ON A SEPARATE SHEET OF PAPER

SECTION 2.1:

Graph the relation. Then tell whether the relation is a function.

2.

x	-2	-1	0	1	2	-2
y	4	-1	3	2	1	-8

Use the vertical line test to determine whether the relation is a function.

3.

4.

5.
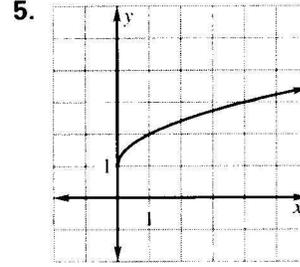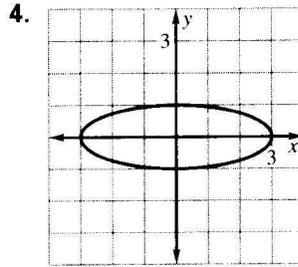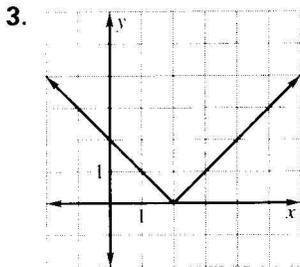
Decide whether the function is linear. Then find the indicated value of $f(x)$.

15. $f(x) = x + 7$; $f(-3)$ **16.** $f(x) = x^3 - x + 2$; $f(1)$ **18.** $f(x) = |3x + 1|$; $f(-5)$

Statistics   **In Exercises 22–24, use the following information.**

The table below shows the number of games won and lost by the teams in the
Eastern Division of the NFL's National Football Conference for the 1996 season.

Team	Won, x	Lost, y
Dallas Cowboys	10	6
Philadelphia Eagles	10	6
Washington Redskins	9	7
Arizona Cardinals	7	9
New York Giants	6	10

22. What is the domain of the relation?

23. What is the range of the relation?

24. Is the number of wins a function of the number of losses?

SECTION 2.2:

Find the slope of the line passing through the given points.

4. $(2, -7), (4, -4)$ **5.** $(0, -8), (-3, -5)$ **6.** $\left(\frac{1}{2}, \frac{3}{4}\right), \left(\frac{3}{2}, \frac{9}{4}\right)$

Tell which line is steeper.

8. Line 1: through $(3, -1)$ and $(5, -5)$
Line 2: through $(-2, -2)$ and $(1, -11)$

Find the slope of the line passing through the given points. Then tell whether the line *rises, falls, is horizontal*, or *is vertical*.

11. $(4, -2)$ and $(3, -3)$ **12.** $(9, -2)$ and $(-3, -2)$ **13.** $(-3, 5)$ and $(5, 3)$
14. $(7, 5)$ and $(7, -8)$

Tell whether the lines are *parallel, perpendicular*, or *neither*.

17. Line 1: through $(3, 2)$ and $(1, 5)$ **19.** Line 1: through $(-2, 1)$ and $(-5, 3)$
     Line 2: through $(-1, 6)$ and $(2, 8)$ Line 2: through $(0, 3)$ and $(3, 5)$

SECTION 2.3:

Find the slope and *y*-intercept of the line.

1. $y = 8x - 7$ **2.** $y = -10x$ **6.** $-2x + 3y - 6 = 0$

Find the intercepts of the line.

7. $y = 3x - 1$ **8.** $y = -x + 6$ **15.** $5x + 2y + 8 = 0$

Graph the equation.

19. $y = 4x + 3$ **20.** $y = -3x - 2$ **24.** $-6x + 9y = 18$ **26.** $8x - 2y = 6$

SECTION 2.4:

Write an equation of the line that passes through the given point and has the given slope.

7. $(2, 1), m = -2$

8. $(-4, 3), m = 5$

Write an equation of the line that passes through the given points.

14. $(-1, 3), (1, -1)$

15. $(-3, -1), (3, 2)$

16. $(4, -2), (6, -3)$

The variables *x* and *y* vary directly. Write an equation that relates the variables. Then find *y* when *x* = 10.

22. $x = 2, y = 6$

24. $x = 4, y = -10$

Measuring Speed **In Exercises 28 and 29, use the following information.**
The speed of an automobile in miles per hour varies directly with its speed in kilometers per hour. A speed of 64 miles per hour is equivalent to a speed of 103 kilometers per hour.

28. Write a linear model that relates speed in miles per hour to speed in kilometers per hour.

29. You are driving through Canada and see a speed limit sign that says the speed limit is 80 kilometers per hour. You are traveling 55 miles per hour. Are you speeding?

Fish and Shellfish Consumption **In Exercises 30 and 31, use the following information.**
For 1992 through 1994, the per capita consumption of fish and shellfish in the U.S. increased at a rate that was approximately linear. In 1992, the per capita consumption was 14.7 pounds, and in 1994 it was 15.1 pounds.

30. Write a linear model for the per capita consumption of fish and shellfish in the U.S. Let *t* represent the number of years since 1992.

31. What would you expect the per capita consumption of fish and shellfish to be in 2002?

SECTION 2.5:

Tell whether *x* and *y* have a *positive correlation*, a *negative correlation*, or *relatively no correlation*.

1.

2.

3.
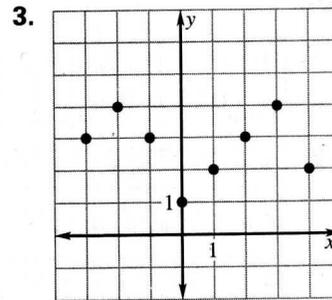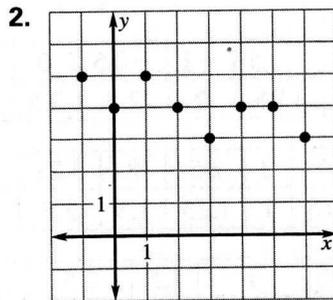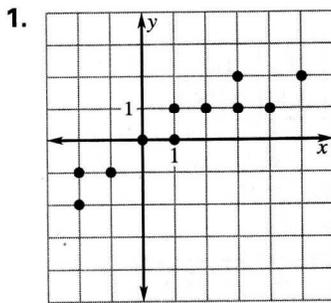
Approximate the best fitting line for the data.

8.
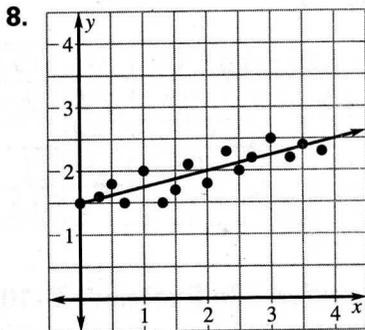
SECTION 2.6:

Check whether the given ordered pairs are solutions of the inequality.

6. $2y + x \geq 3;\ (-1, -2), (1, 1)$

Graph the inequality in a coordinate plane.

7. $x \geq 1$

12. $\frac{1}{3}y \geq -2$

13. $y < 2x - 1$

21. $12x + 4y < 8$

Fundraiser   **In Exercises 25–27, use the following information.**
An environmentalist group is planning a fundraiser. The group wants to purchase caps and T-shirts with their logo on them and sell them at a profit. They can buy caps for $3 each and T-shirts for $5 each. They have $800 to spend.

25. Write and graph an inequality that represents the numbers of caps *x* and T-shirts *y* that the group can buy.

26. Suppose the group purchased 50 caps and 150 T-shirts. What point on the coordinate plane represents this purchase?

27. Is the point in Exercise 26 a solution of the inequality?