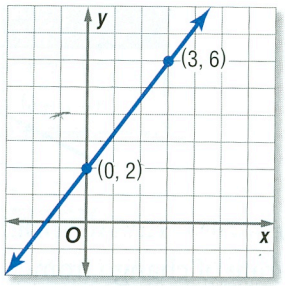
Check Your Understanding

Example 1 p. 170

Find the rate of change represented in each table or graph.

1.



2.

x	y
3	−6
5	2
7	10
9	18
11	26

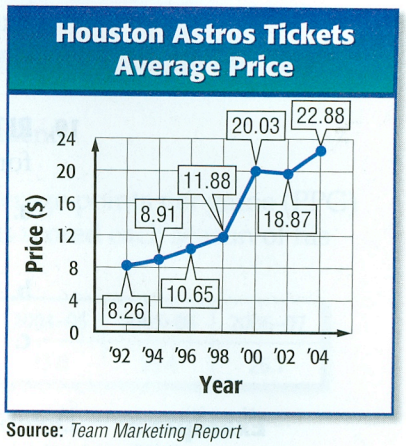
Example 2 p. 171

3. **SPORTS** Refer to the graph at the right.

a. Find the rate of change of prices from 2002 to 2004. Explain the meaning of the rate of change.

b. Without calculating, find a two-year period that had a greater rate of change than 2002–2004. Explain.

c. Between which years would you guess the new stadium was built? Explain your reasoning.



Source: *Team Marketing Report*

Example 3 p. 172

Determine whether each function is linear. Write *yes* or *no*. Explain.

4.

x	−7	−4	−1	2	5
y	5	4	3	2	1

5.

x	8	12	16	20	24
y	7	5	3	0	−2

Examples 4 and 5 pp. 173–174

Find the slope of the line that passes through each pair of points.

6. (5, 3), (6, 9)
7. (−4, 3), (−2, 1)
8. (6, −2), (8, 3)
9. (1, 10), (−8, 3)
10. (−3, 7), (−3, 4)
11. (5, 2), (−6, 2)

Example 6 p. 174

Find the value of r so the line that passes through each pair of points has the given slope.

12. $(-4, r), (-8, 3), m = -5$
13. $(5, 2), (-7, r), m = \frac{5}{6}$

Practice and Problem Solving

= **Step-by-Step Solutions** begin on page R12.
Extra Practice begins on page 815.

Example 1 p. 170

Find the rate of change represented in each table or graph.

14.

x	y
5	2
10	3
15	4
20	5

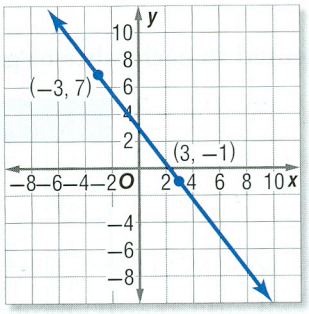
15

x	y
1	15
2	9
3	3
4	−3

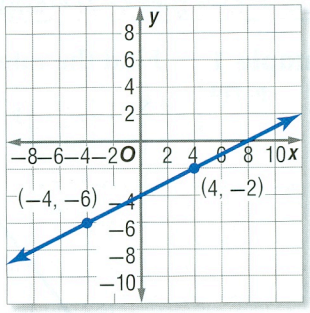
Example 1 p. 170

Find the rate of change represented in each table or graph.

16.



17.



Example 2 p. 171

18. SPORTS What was the annual rate of change from 1995 to 2003 for women competing in triathlons? Explain the meaning of the rate of change.

Year	Number of Women
1995	4600
2003	19,100

19. RETAIL The average retail price in the spring of 2008 for a used car is shown in the table at the right.

Age (years)	Value ($)
2	15,924.96
3	14,113.29

a. Write a linear function to model the price of the car with respect to age.

b. Interpret the meaning of the slope of the line.

c. Assuming a constant rate of change predict the average retail price for a 7-year-old car.

Example 3 p. 172

Determine whether each function is linear. Write *yes* or *no*. Explain.

20.

x	4	2	0	−2	−4
y	−1	1	3	5	7

21.

x	−7	−5	−3	−1	0
y	11	14	17	20	23

22.

x	−0.2	0	0.2	0.4	0.6
y	0.7	0.4	0.1	0.3	0.6

23.

x	$\frac{1}{2}$	$\frac{3}{2}$	$\frac{5}{2}$	$\frac{7}{2}$	$\frac{9}{2}$
y	$\frac{1}{2}$	1	$\frac{3}{2}$	2	$\frac{5}{2}$

Examples 4 and 5 pp. 173–174

Find the slope of the line that passes through each pair of points.

24. (4, 3), (−1, 6)

25. (8, −2), (1, 1)

26. (2, 2), (−2, −2)

27. (6, −10), (6, 14)

28. (5, −4), (9, −4)

29. (11, 7), (−6, 2)

30. (−3, 5), (3, 6)

31. (−3, 2), (7, 2)

32. (8, 10), (−4, −6)

33. (−8, 6), (−8, 4)

34. (−12, 15), (18, −13)

35. (−8, −15), (−2, 5)

Example 6 p. 174

Find the value of r so the line that passes through each pair of points has the given slope.

36. (12, 10), (−2, r), $m = -4$

37. (r, −5), (3, 13), $m = 8$

38. (3, 5), (−3, r), $m = \frac{3}{4}$

39. (−2, 8), (r, 4), $m = -\frac{1}{2}$

ESTIMATION **Use a ruler to estimate the slope of each object.**

40.

41.