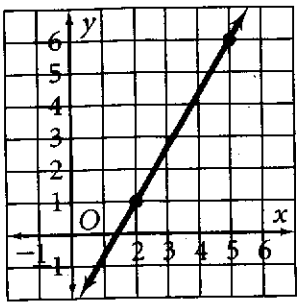
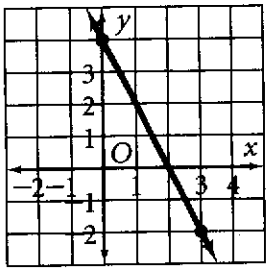
Name _____ Class _____ Date _____

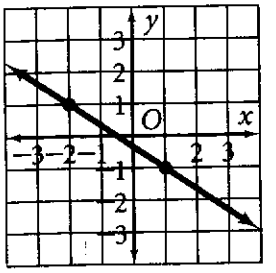
Practice 6-1

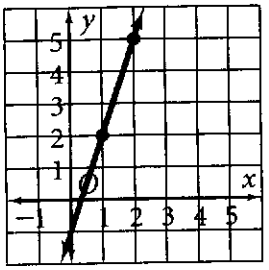
Rate of Change and Slope

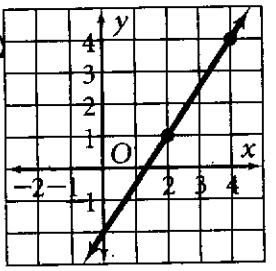
Find the slope of each line.

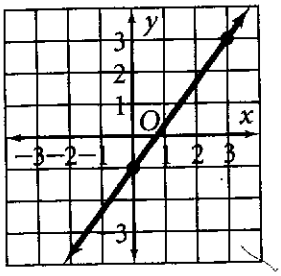
1. 

2. 

HW 3. 

4. 

HW 5. 

6. 

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

HW 7. (1, 2), (4, 3)

8. (7, 2), (3, 5)

HW 9. (0, 2), (4, 6)

10. (−2, 5), (3, −4)

11. (2, 4), (6, 7)

12. (−2, −5), (4, 5)

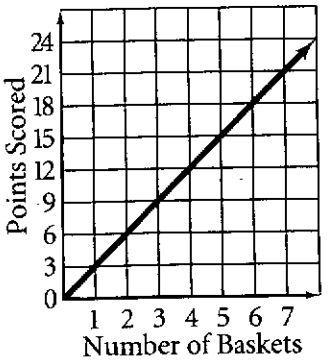
HW 13. (−3, −2), (4, −2)

HW 14. (4, −2), (4, 9)

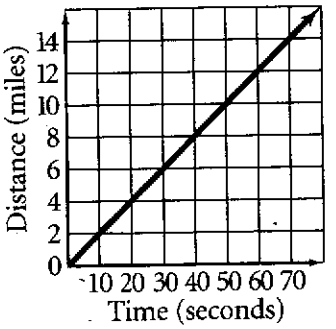
HW 15. (5, 2), (8, −4)

Find the rate of change. Explain what the rate of change means for each situation.

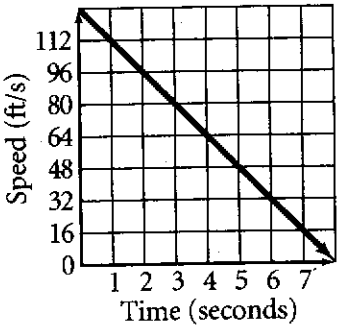
16. **Points Scored for 3-point Baskets**



17. HW **Distance Sound Travels in Air**



18. HW **Speed**



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

19. (0, 0), (3, 7)

20. (−2, 4), (4, −1)

21. (−3, 6), (1, −2)

22. (2, 4), (4, −4)

23. (2, −10), (5, −6)

24. (5, 1), (11, 1)

HW 25. (3, 7), (3, 5)

HW 26. (7, 9), (2, 9)

27. (−5, −2), (−5, 3)

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Practice 6-2

Slope-Intercept Form

Find the slope and *y*-intercept of each equation. Then graph.

HW 1. $y = x + 2$ 2. $y + 3 = -\frac{1}{3}x$ 3. $y = 2x - 1$ 4. $y - \frac{3}{5}x = -1$

HW 5. $y = \frac{1}{2}x - 4$ 6. $y - 2x = -3$ 7. $y = \frac{2}{5}x + 3$ 8. $y + \frac{1}{3}x = -2$

HW 9. $y = -x - 2$ 10. $y - 6 = -2x$ HW 11. $y = -5x - 2$ 12. $y + x = 0$

HW 13. $y + 4 = 2x$ 14. $y = -5x + 5$ 15. $y = -4 + x$ 16. $y = -4x$

17. $y = \frac{4}{5}x + 2$ 18. $y - \frac{3}{4}x = -5$ 19. $y = -6$ 20. $y - 3 = -\frac{2}{3}x$

21. $y = -\frac{7}{4}x + 6$ 22. $y + 3x = 6$ HW 23. $y + \frac{1}{5}x = -2$ 24. $y = \frac{3}{7}x$

Write an equation of a line with the given slope and *y*-intercept.

25. $m = 4, b = 8$ 26. $m = -2, b = -6$ HW 27. $m = \frac{4}{3}, b = 0$

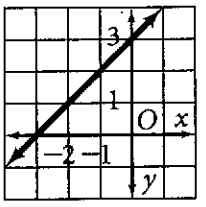
28. $m = -\frac{9}{5}, b = -7$ 29. $m = -6, b = 1$ HW 30. $m = \frac{3}{7}, b = -1$

31. $m = -\frac{1}{5}, b = -3$ 32. $m = 9, b = 4$ HW 33. $m = -8, b = 11$

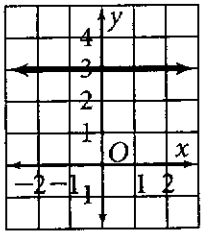
34. $m = \frac{2}{9}, b = 0$ 35. $m = -11, b = 13$ HW 36. $m = -\frac{7}{2}, b = -6$

Write the slope-intercept form of the equation for each line.

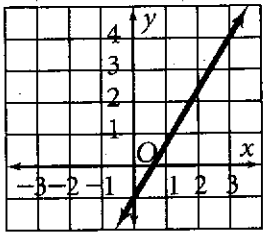
HW 37.



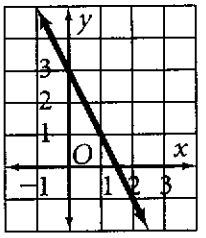
38.



HW 39.



40.



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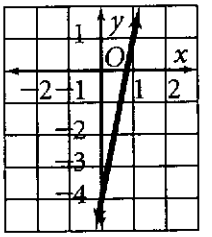
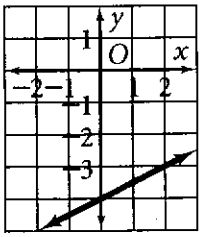


42.



HW 43. A television production company charges a basic fee of $4000 and then $2000 per hour when filming a commercial.

a. Write an equation in slope-intercept form relating the basic fee and per-hour charge.

b. Graph your equation.

c. Use your graph to find the production costs if 4 hours of filming were needed.

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Practice 6-3

Applying Linear Functions

Model each situation with a linear function and graph. Is it reasonable to include negative numbers in the range?

1. A gas station that fills portable propane tanks (such as are used for camping and for outdoor barbecues) charges $2.60 per gallon. HW

2. The weight of a bucket of golfballs is a function of the number of balls, each of which weighs 1.6 oz. The bucket itself weighs 2 lb.

3. It costs a farmer $110 to bring 150 pounds of tomatoes to market, and the tomatoes sell for $2 per pound. The difference between the income from sales and the cost is the farmer's profit.

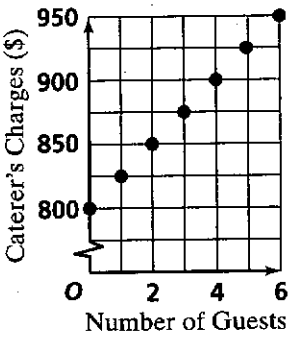
4. A newly-started high school hopes to enroll 80 students in its first year and to increase enrollment by 40 students per year over the next five years. HW

5. Temperature on the Fahrenheit scale is a linear function of temperature on the Celsius scale. Ten degrees Celsius equals 50 degrees Fahrenheit, and 25 degrees Celsius equals 77 degrees Fahrenheit. HW

6. Natalie spends 90 minutes doing her math and English homework. The time she spends on her math homework is a function of the time she spends on her English homework.

Write a linear function for each graph, and state and interpret the slope and the *y*-intercept in each case.

7. A caterer charges a flat fee to put on an event, plus a per-person cost based on how many guests attend. HW



8. Total cost of operating a rental car for one day is a function of rental fee plus cost of gasoline.