

# Sheet # 395 Cumulative Practice

Plot the numbers on a number line. Write the numbers in increasing order. (1.1)

1.  $0, \pi, 2\frac{3}{4}, -\frac{3}{2}, 4$

2.  $\frac{5}{2}, -\frac{1}{10}, -2, \sqrt{5}, 1.9$

3.  $-4.25, -\frac{16}{3}, -\sqrt{9}, -0.4, -1$

Identify the property shown. (1.1)

4.  $8 \cdot \frac{1}{8} = 1$

5.  $-1(9 + 7) = (-1)9 + (-1)7$

6.  $-6 \cdot (-3 \cdot 4) = (-6 \cdot (-3)) \cdot 4$

Evaluate the expression. (1.2)

7.  $12 \div 2 - 4 \cdot 7$

8.  $-8 + 3(1 - 5)^2$

9.  $17 - 2^4 \div 8 + 1$

10.  $-2(16 + 7) \div -10$

Simplify the expression. (1.2)

11.  $18a + 7a - 9a + 11$

12.  $10x - (4y - x) + y$

13.  $6(n^2 - n) - 5n^2 + 8n$

Solve the equation. (1.3, 1.7)

14.  $\frac{5}{8}x - 9 = 21$

15.  $-75 = 9x - 3$

16.  $4(2x - 1) = -20$

17.  $3 - x = 5x + 27$

18.  $|x| = 9$

19.  $|4x + 1| = 39$

20.  $|7 - 2x| = 15$

21.  $|x - 10| = 0$

Solve the formula for the indicated variable. (1.4)

22. Distance

Solve for  $r$ :  $d = rt$

23. Volume of a Cylinder

Solve for  $h$ :  $V = \pi r^2 h$

24. Area of a Trapezoid

Solve for  $h$ :  $A = \frac{1}{2}(b_1 + b_2)h$

Graph the relation. Then tell whether the relation is a function. (2.1)

32. 

$x$	2	-4	2	-1	0
$y$	1	0	5	-1	3

33. 

$x$	-3	-1	1	3	5
$y$	1	0	-1	-2	-3

Graph in a coordinate plane. (2.1, 2.3, 2.6-2.8)

34.  $y = -2x + 5$

35.  $x - 3y = 6$

36.  $y = 2$

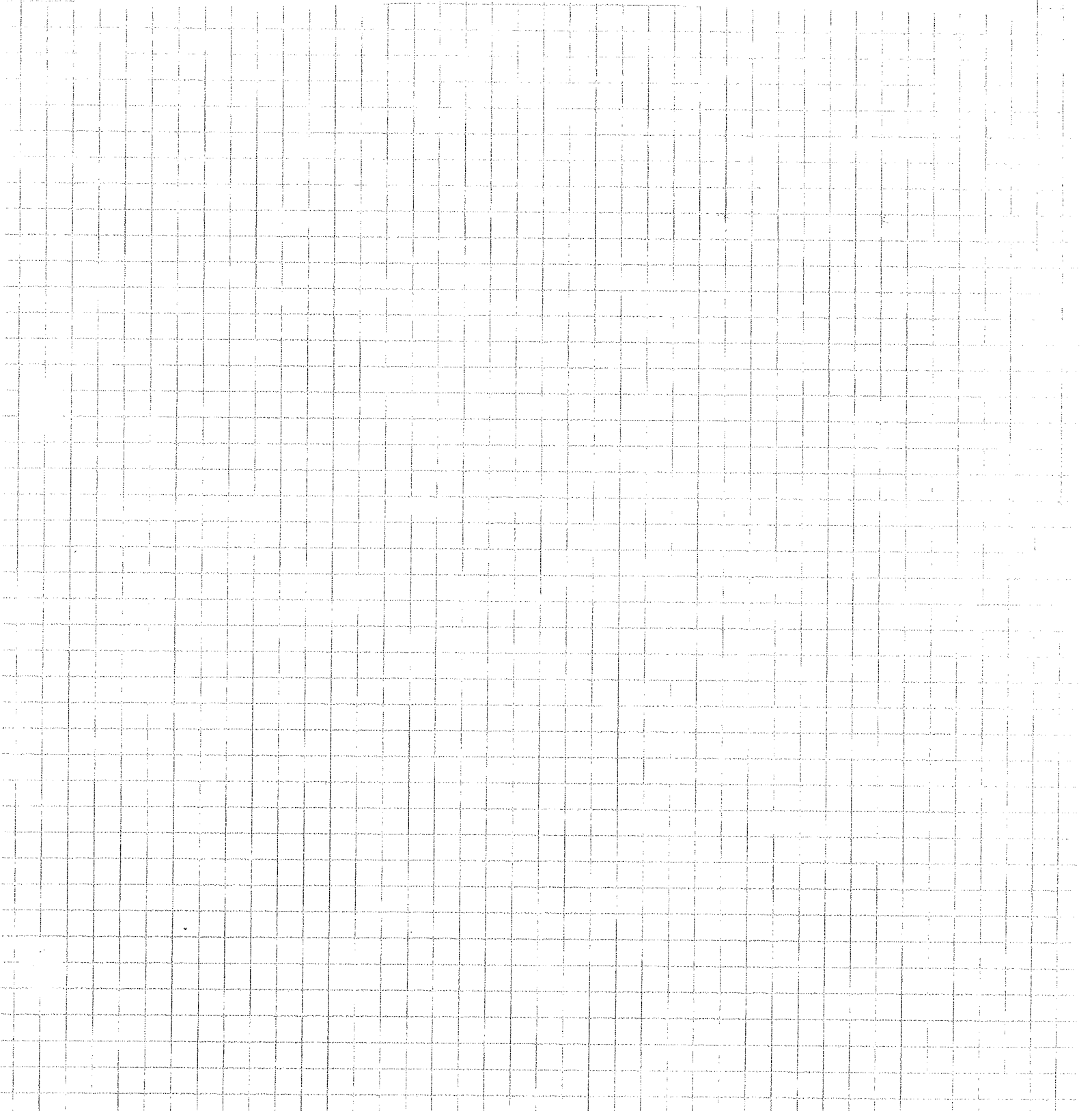
37.  $x = -4$

42.  $f(x) = 4|x|$

43.  $f(x) = |x| - 3$

44.  $f(x) = 2|x + 2|$

45.  $f(x) = -|x - 5| + 1$



Tell whether the lines are *perpendicular, parallel, or neither*. (2.2)

53. Line 1: through (0, 7) and (3, 6)  
Line 2: through (-2, -9) and (0, -3)

54. Line 1: through (-6, -3) and (0, 1)  
Line 2: through (0, -5) and (4, -2)

Write an equation of the line with the given characteristics. (2.4)

55. slope: -3, y-intercept: 7

56. vertical line through (2, 5)


57. x-intercept: -2, y-intercept: 1

Evaluate the function for the given value(s). (2.1, 2.7, 2.8, 3.5)

58.  $f(x) = 5x - 17$ ,  $f(-3)$

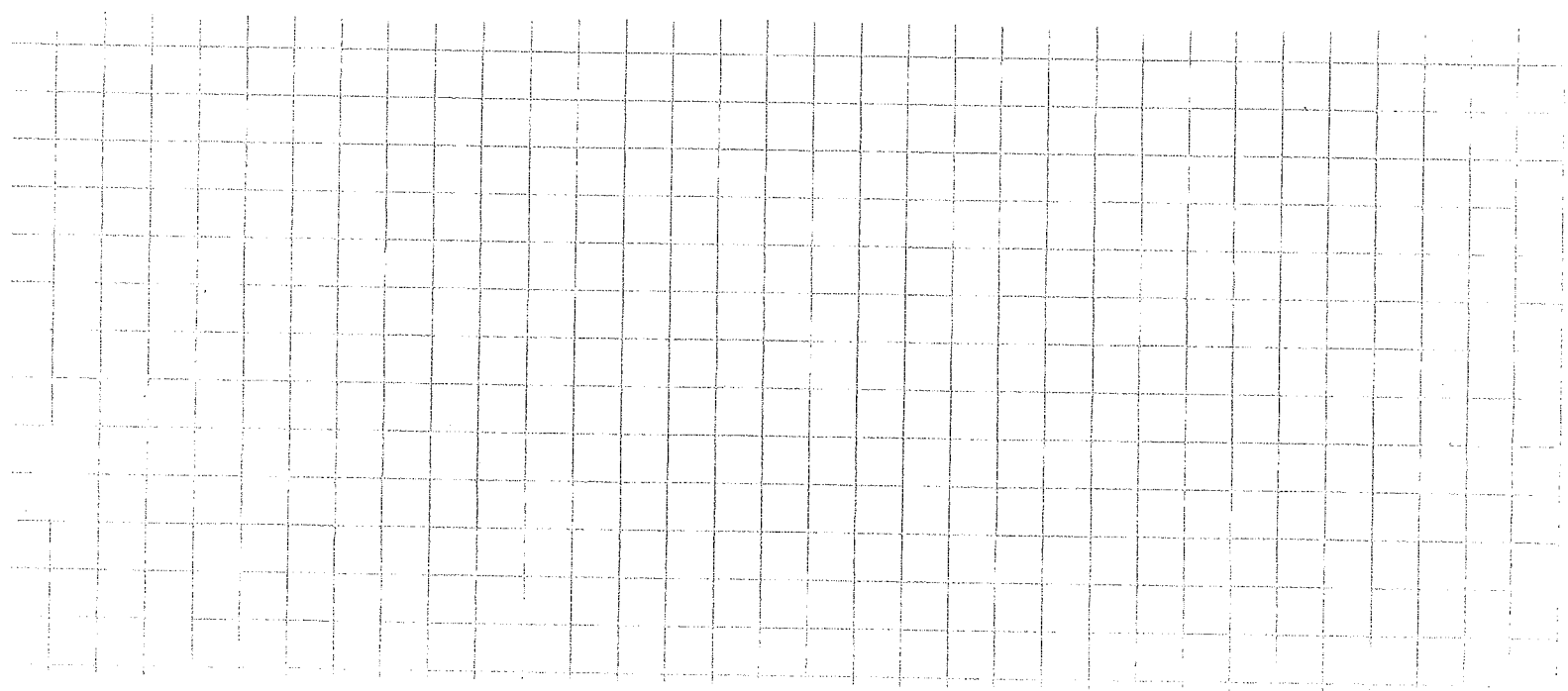
59.  $f(x) = x^2 - 2x + 11$ ,  $f(2)$

61.  $f(x) = -|12 - 8x|$ ,  $f(1)$

75.  **SOLID WASTE** The table gives the amount of material recovered from solid waste (in millions of tons) in the United States from 1988 to 1996. Make a scatter plot of the data and approximate a best-fitting line. Predict the amount of material recovered in the United States in 2002. (2.5)

Years since 1988, $t$	0	1	2	3	4	5	6	7	8
Material, $m$	23.5	29.9	33.6	37.0	40.6	43.8	50.9	55.1	57.3

► Source: *Statistical Abstract of the United States*

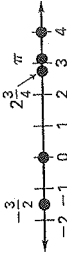


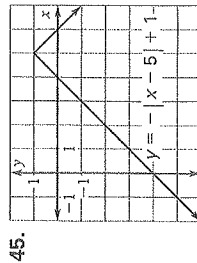
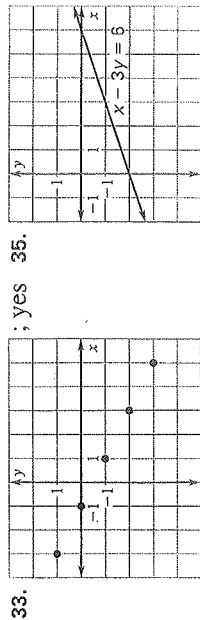
72. **SWEATER SALE** You pay \$38.50 for a sweater that is marked 30% off the regular price. What is the regular price of the sweater? How much did you save by buying it on sale? (1.5)

74. **HIGHWAY TRAVEL** If you drive at a constant speed then the distance you travel  $d$  varies directly with the time  $t$ . Suppose you use cruise control and drive 180 miles in 3 hours. Write an equation to show the relationship between  $d$  and  $t$ . What is the constant of variation and what does it represent? (2.4)

76. **AUTO RENTAL** An automobile rental agency charges \$60 per day with unlimited mileage. A second agency charges \$45 per day plus \$.25 per mile after the first 100 miles. For a one-day rental, after how many miles will the first agency be less expensive?

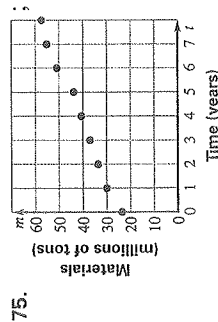
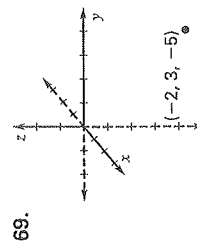
**CUMULATIVE PRACTICE**

1.  $-\frac{3}{2}$ ;  $-\frac{2}{4}$ ;  $0$ ;  $2\frac{3}{4}$ ;  $\pi$ ;  $4$   
  
 5. distributive property 7. -22 9. 16 11.  $16a + 11$   
 13.  $n^2 + 2n$  15. -8 17. -4 19. -10, 9.5 21. 10 23.  $h = \frac{V}{\pi r^2}$



53. perpendicular 55.  $y = -3x + 7$  57.  $y = \frac{1}{2}x + 1$

59. 11 61. -4



Sample answer:  $y = 4.20t + 24.5$ ; about 83.3 million tons