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57. **SOCIAL STUDIES CONNECTION** For 1980 through 1998, the population (in thousands) of Hawaii can be modeled by  $13.2t + 965$  where  $t$  is the number of years since 1980. What was the population of Hawaii in 1998? What was the population increase from 1980 to 1998? ▶ Source: U.S. Bureau of the Census
58. **PHYSICAL THERAPY** In 1996 there were approximately 115,000 physical therapy jobs in the United States. The number of jobs is expected to increase by 8100 each year. Write an expression that gives the total number of physical therapy jobs each year since 1996. Evaluate the expression for the year 2010.
-  **DATA UPDATE** of U.S. Bureau of Labor Statistics data at [www.mcdougallittell.com](http://www.mcdougallittell.com)
59. **MOVIE RENTALS** You buy a VCR for \$149 and plan to rent movies each month. Each rental costs \$3.85. Write an expression that gives the total amount you spend during the first twelve months that you own the VCR, including the price of the VCR. Evaluate the expression if you rent 6 movies each month.
60. **USED CARS** You buy a used car with 37,148 miles on the odometer. Based on your regular driving habits, you plan to drive the car 15,000 miles each year that you own it. Write an expression for the number of miles that appears on the odometer at the end of each year. Evaluate the expression to find the number of miles that will appear on the odometer after you have owned the car for 4 years.

**Solve the equation.**

7.  $x + 4 = 9$                       8.  $4x = 24$                       9.  $2x - 3 = 7$
10.  $0.2x - 8 = 0.6$                       11.  $\frac{1}{3}x + \frac{1}{2} = \frac{11}{12}$                       12.  $\frac{3}{4}x - \frac{2}{3} = \frac{5}{6}$
13.  $1.5x + 9 = 4.5$                       14.  $6x - 4 = 2x + 10$                       15.  $2(x + 2) = 3(x - 8)$

**SOLVING EQUATIONS** Solve the equation. Check your solution.

33.  $\frac{7}{2}x - 1 = 2x + 5$                       34.  $\frac{1}{2}x - \frac{5}{3} = -\frac{1}{2}x + \frac{19}{4}$
35.  $\frac{3}{4}\left(\frac{4}{5}x - 2\right) = \frac{11}{4}$                       36.  $-\frac{2}{3}\left(\frac{6}{5}x - \frac{7}{10}\right) = \frac{17}{20}$
37.  $2.7n + 4.3 = 12.94$                       38.  $-4.2n - 6.5 = -14.06$
39.  $3.1(x + 2) - 1.5x = 5.2(x - 4)$                       40.  $2.5(x - 3) + 1.7x = 10.8(x + 1.5)$

45. **CAR REPAIR** The bill for the repair of your car was \$390. The cost for parts was \$215. The cost for labor was \$35 per hour. How many hours did the repair work take?
46. **SUMMER JOBS** You have two summer jobs. In the first job, you work 28 hours per week and earn \$7.25 per hour. In the second job, you earn \$6.50 per hour and can work as many hours as you want. If you want to earn \$255 per week, how many hours must you work at your second job?
47. **STOCKBROKER** A stockbroker earns a base salary of \$40,000 plus 5% of the total value of the stocks, mutual funds, and other investments that the stockbroker sells. Last year, the stockbroker earned \$71,750. What was the total value of the investments the stockbroker sold?

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**SIMPLIFYING EXPRESSIONS** Simplify the expression. (Review 1.2)

69.  $3(7 + x) - 8x$                       70.  $2(8 + x) + 2x - x$
71.  $4x - (6 - 3x)$                       72.  $2x - 3(4x + 7)$
73.  $3(x + 9) + 2(4 - x)$                       74.  $-4(x - 3) - 2(x + 7)$
75.  $2(x^2 + 2) - x + x^2 + 7$                       76.  $2(x^2 - 81) - 3x^2$
77.  $x^2 - 5x + 3(x^2 + 7x)$                       78.  $4x^2 - 2(x^2 - 3x) + 6x + 8$

**Solve the equation for y:**

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4.  $4x + 8y = 17$                       5.  $5x - 3y = 9$                       6.  $5y - 3x = 15$
7.  $\frac{3}{4}x + 5y = 20$                       8.  $xy + 2x = 8$                       9.  $\frac{2}{3}x - \frac{1}{2}y = 12$

**REWRITING FORMULAS** Solve the formula for the indicated variable.

24. Circumference of a Circle                      25. Volume of a Cone  
Solve for  $r$ :  $C = 2\pi r$                       Solve for  $h$ :  $V = \frac{1}{3}\pi r^2 h$
26. Area of a Triangle                      27. Investment at Simple Interest  
Solve for  $b$ :  $A = \frac{1}{2}bh$                       Solve for  $P$ :  $I = Prt$
28. Celsius to Fahrenheit                      29. Area of a Trapezoid  
Solve for  $C$ :  $F = \frac{9}{5}C + 32$                       Solve for  $b_2$ :  $A = \frac{1}{2}(b_1 + b_2)h$

**SIMPLE INEQUALITIES** Solve the inequality. Then graph your solution.

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25.  $4x + 5 > 25$                       26.  $7 - n \leq 19$                       27.  $5 - 2x \geq 27$
28.  $\frac{1}{2}x - 4 > -6$                       29.  $\frac{3}{2}x - 7 < 2$                       30.  $5 + \frac{1}{3}n \leq 6$
31.  $4x - 1 > 14 - x$                       32.  $-n + 6 < 7n + 4$                       33.  $4.7 - 2.1x > -7.9$
34.  $2(n - 4) \leq 6$                       35.  $2(4 - x) > 8$                       36.  $5 - 5x > 4(3 - x)$

**COMPOUND INEQUALITIES** Solve the inequality. Then graph your solution.

37.  $-2 \leq x - 7 \leq 11$                       38.  $-16 \leq 3x - 4 \leq 2$                       39.  $-5 \leq -n - 6 \leq 0$
40.  $-2 < -2n + 1 \leq 7$                       41.  $-7 < 6x - 1 < 5$                       42.  $-8 < \frac{2}{3}x - 4 < 10$
43.  $x + 2 \leq 5$  or  $x - 4 \geq 2$                       44.  $3x + 2 < -10$  or  $2x - 4 > -4$
45.  $-5x - 4 < -1.4$  or  $-2x + 1 > 11$                       46.  $x - 1 \leq 5$  or  $x + 3 \geq 10$
47.  $-0.1 \leq 3.4x - 1.8 < 6.7$                       48.  $0.4x + 0.6 < 2.2$  or  $0.6x > 3.6$