A. Solve for the variable in each equation.

1. $7x = 63$

2. $23 + m = 51$

3. $-13 = y - 12$

4. $\frac{x}{4} = -16$

5. $5a = 625$

6. $y - 17 = -30$

7. $x + 6 = 33$

8. $4c = 28$

9. $\frac{12}{x} = -3$

10. $26 = b + 33$

11. $93 = 3x$

12. $s + 16 = 8$

13. $36 = \frac{x}{3}$

14. $t + 14 = 53$

15. $\frac{x}{6} = 8$

16. $16y = -48$

17. $r - 35 = 75$

18. $24 = \frac{120}{x}$

19. $5y = -45$

20. $d + 45 = 20$

21. $16 = 4x$

22. $-4x = 24$

23. $19 = h - 7$

24. $\frac{x}{11} = 6$

25. $m + 24 = 14$

26. $5y = 45$

27. $14 - w = 42$

28. $18 = \frac{y}{4}$

B. Choose the <u>one best answer</u> to each question.

<u>Questions 29 and 30</u> refer to the following table.

April Time Sheet Summary
Hours Worked per Week

Week	1	2	3	4
Kayla Sax	36	40	40	
Erin Grady		24	28	38

29. Kayla and Erin worked a total of 77 hours during Week 1. Let x = Erin's hours for Week 1. Which of the following equations could be used to solve for Erin's hours during Week 1?

    A. $x - 36 = 77$
    B. $x + 77 = 36$
    C. $x + 36 = 77$
    D. $x - 77 = 36$

30. Erin worked twice as many hours as Kayla did during Week 4. Let y = Kayla's hours for Week 4. Which of the following equations could be used to solve for Kayla's hours during Week 4?

    A. $\frac{y}{2} = 38$

    B. $38y = 2$
    C. $2y = 38$

    D. $\frac{1}{2y} = 38$

31. The quotient of a number divided by 4 is 32. What is the number?

    A. 8
    B. 28
    C. 128
    D. 512

32. The solution $x = -5$ makes which of the following equations true?

    A. $14 - x = 9$
    B. $\frac{x}{5} = 1$
    C. $x + 3 = 8$
    D. $12x = -60$

33. Mike had $572.18 in his checking account. After writing a check, he had $434.68. Which of the following equations could be used to find the amount of the check (c)?

    A. $\$572.18 + c = \$434.68$
    B. $\$572.18 - c = \$434.68$
    C. $\$572.18c = \$434.68$
    D. $\dfrac{\$572.18}{c} = \$434.68$

Answers and explanations begin on page 669.

A. Solve for the variable in each equation.

1. $3x - 20 = 130$
2. $2y - 8 = -3y - 18$
3. $6m = 14m - 16$
4. $2x + 5 + 6x = -27$
5. $5y + 3(y + 2) = 54$
6. $17 - 4z + 2z = 13$
7. $6m - 4 = m + 11$
8. $35 = x + 7 + 6x$
9. $5p - 2 = 6p - 9$
10. $50 = 3(s + 16) - 2(s - 2)$

11. $\dfrac{5(2x - 10)}{2} + 14 = 19$
12. $3(3 + r) = 2r + 4$
13. $5y = 2y + 22 + y$
14. $38 = 5(2b - 3) + 3b + 1$
15. $-5 - x = 2x - (4x + 6)$
16. $\dfrac{3h}{2} = 30$
17. $4(3 + 2x) + 8 = 92$
18. $-5(3 - z) = z + 1$
19. $10 - 3b + 3 = -1 + (b + 2)$
20. $5n + 8 - n = 6(n - 1)$

B. Choose the <u>one best answer</u> to each question.

21. Three times a number increased by 9 is 15 less than six times the number. Let $x =$ the unknown number. Which of the following equations could be used to find the value of x?

    A. $3(9x) = 6(15x)$
    B. $3x(9) = 6x - 15x$
    C. $3x + 9 = 15 - 6x$
    D. $3x + 9 = 6x - 15$

22. Dave has 500 baseball cards, which is as many as Eric and Travis have combined. Eric has three times as many cards as Travis has.

Dave	Eric	Travis
500	$3x$	x

    From the information, you can write the equation $3x + x = 500$. How many cards does Eric have? (*Hint:* Solve for x. Then find how many cards Eric has.)

    A. 150
    B. 250
    C. 350
    D. 375

23. The difference of four times a number and 7 is 15 plus the quotient of the number and 3. Which of the following equations could be used to find the value of x?

    A. $4x - 7 = \frac{x}{3} + 15$
    B. $7 - 4x = \frac{x}{3} + 15$
    C. $7 - 4x = \frac{3}{x} + 15$
    D. $4x - 7 = \frac{3}{x} + 1$

24. Kim earned x dollars at his part-time job on Friday. His wife earned $12 more than twice Kim's pay $(2x + 12)$. Together, they earned $174. How much did Kim earn on Friday?
    (*Hint:* Use the equation $x + (2x + 12) = \$174$

    A. $54
    B. $87
    C. $108
    D. $120

Answers and explanations begin on page 669.

2. Multiply each term by the cost for that type of ticket. Set the total equal to $2240, and solve for x.

$$12x + 8(200 - x) = 2240$$
$$12x + 1600 - 8x = 2240$$
$$4x + 1600 = 2240$$
$$4x = 640$$
$$x = 160$$

3. There were **160 adult tickets** sold.

EQUATIONS, INEQUALITIES, AND FUNCTIONS ▸ PRACTICE 2

A. Solve.

1. Two houses are for sale on the same street. The second house has 1000 square feet less than twice the square feet of the first house. Together the houses have 4400 square feet. What is the square footage of the first house?

2. Julia has 24 coins in her pocket. The coins are either dimes or quarters. The total value of the coins is $4.50. How many coins are dimes? (*Hint:* The value of the dimes is $0.10x$, and the value of the quarters is $0.25(24 - x)$.)

3. The Bulldogs won twice as many games as they lost. If they played a total of 36 games, how many did they win? (There were no tied games.)

4. The sum of four consecutive even numbers is 212. What is the third number? (*Hint:* Let x = the first number, $x + 2$ = the second number, $x + 4$ = the third, and so on.)

5. A children's store is selling pants for $6 each and shirts for $4. Brenda bought 13 items and paid $62. How many shirts did she buy?

6. The sum of three consecutive numbers is 180. What is the least number in the series?

7. In a month Andrew spends twice as much on rent as he does on food for his family. Last month, he spent $1650 on rent and food. How much did he spend on rent?

8. George spends four times as much time helping customers as he does stocking shelves. Last week, he spent 35 hours on the two tasks. How many hours were spent helping customers?

B. Choose the <u>one best answer</u> to each question.

9. Sylvia scored 10 points better than Wiley on their science exam. Greg scored 6 points less than Wiley. Altogether, the students earned 226 points. How many points did Sylvia earn?

   A. 74
   B. 78
   C. 84
   D. 94

10. Two adults and four children paid $48 to get into the fair. A child's ticket is $6 less than an adult's ticket. What is the cost of an adult's ticket?

    A. $15
    B. $12
    C. $9
    D. $6

11. Jenny is four times as old as her niece Tina. In 12 years, Jenny will be only twice as old as Tina. The chart shows expressions for Tina and Jenny's ages now and in 12 years.

	Jenny's Age	Tina's Age
Now	$4x$	x
In 12 Years	$4x + 12$	$x + 12$

How old is Tina now?

    A. 4
    B. 6
    C. 8
    D. 12

Answers and explanations begin on page 669.