LESSON 12-2

Practice A

Solving Multi-Step Equations

Solve. Choose the letter for the best answer.

1. $12n - 7 - 3n = 11$

A $n = 1$ **C** $n = 9$ **(B)** $n = 2$ **D** $n = 18$

2. $3a + 2 + 4a = 23$

(F) $a = 3$ **G** $a = 5$ **H** $a = 7$ **J** $a = 9$

3. $4(y + 5) + 3 = 35$

(A) $y = 3$ **C** $y = 20$ **B** $y = 4.5$ **D** $y = 27$

4. $2(h - 6) + 20 = -4$

F $h = 4$ **(H)** $h = -6$ **G** $h = 1$ **J** $h = -18$

Solve.

5. $x + 6 + 2x = 15$ — $x = 3$

6. $10b + 9 - 3b = 2$ — $b = -1$

7. $5n - 2 + 3n = 5$ — $n = \frac{7}{8}$

8. $6(w - 8) + 16 = 4$ — $w = 6$

9. $2(z + 5) + 4 = -12$ — $z = -13$

10. $1.5(b + 6) + 9 = 24$ — $b = 4$

11. Jose ran twice as many kilometers as Karen. Adding 8 to the number of kilometers Jose ran and dividing by 4 gives the number of kilometers Maria ran. Maria ran 3 kilometers. How many kilometers did Karen run?

2 kilometers

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LESSON 12-2

Practice B

Solving Multi-Step Equations

Solve.

1. $15x - 8 - 3x = 16$ — $x = 2$

2. $5n + 3 + 4n = 30$ — $n = 3$

3. $h - 6 + 7h = 42$ — $h = 6$

4. $-3g + 6 + 2g = 15$ — $g = -9$

5. $-2b + 7 - 3b = 2$ — $b = 1$

6. $5y + 1 + 3y = -15$ — $y = -2$

7. $4k - 14 + 3k = 21$ — $k = 5$

8. $9m + 10 - 14m = -5$ — $m = 3$

9. $-2d + 18 - 4d = 60$ — $d = -7$

10. $3(n + 5) + 2 = 26$ — $n = 3$

11. $4 - 2(v - 6) = -8$ — $v = 12$

12. $1.4 - 1.6(t + 6) = 4.6$ — $t = -8$

13. $2.4(m - 3) + 3.8 = -8.2$ — $m = -2$

14. $6 = 8(s - \frac{3}{4}) - 20$ — $s = 4$

15. $5(c + \frac{4}{5}) + 6 = 50$ — $c = 8$

16. Joel has twice as many CDs as Mariella has. Subtracting 7 from the number of CDs Joel has and dividing by 3 equals the number of CDs Blake has. If Blake has 25 CDs, how many CDs does Mariella have?

Mariella has 41 CDs.

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LESSON 12-2

Practice C

Solving Multi-Step Equations

Solve.

1. $-31x - 18 + 3x = 38$ — $x = -2$

2. $15n + 16 + 4n = 130$ — $n = 6$

3. $h - 48 + 17h = 42$ — $h = 5$

4. $-6g + 7g - 7 = 9$ — $g = 16$

5. $16 - 12a - 13a = -9$ — $a = 1$

6. $8y + 43 - 7y = -15$ — $y = -58$

7. $4(c - 3) - 6 = 10$ — $c = 7$

8. $3.8(s - 6) + 4.6 = -22$ — $s = -1$

9. $18(m + \frac{4}{9}) - 16 = 118$ — $m = 7$

10. $\frac{17u - 24}{18} = \frac{5}{9}$ — $u = 2$

11. $\frac{0.4n - 1}{7} = 5$ — $n = 90$

12. $\frac{18 - 4t}{0.5} = 20$ — $t = 2$

13. $\frac{1.4m - 4.5}{1.5} = 8.2$ — $m = 12$

14. $\frac{\frac{1}{3}s - 2}{5} = -2$ — $s = -24$

15. $\frac{5.6 - 2a + 1.4}{1.2} = 4.5$ — $a = 0.8$

16. There are 5 times as many tomato plants in the garden as there are cucumber plants. The number of pepper plants is 7 more than the sum of the number of tomato and cucumber plants. There are 19 pepper plants in the garden. How many cucumber plants are there? How many tomato plants are there?

There are 2 cucumber plants and 10 tomato plants.

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LESSON 12-2

Reteach

Solving Multi-Step Equations

Some equations require more than two steps to solve. To make these equations easier to solve, first combine any like terms. Also, you may need to use the Distributive Property to complete multiplication that involves parentheses.

Complete the steps to solve each equation.

1. $5a - 7 + 3a = 17$

$8a - 7 = 17$ ← Combine like terms: $5a + 3a =$ $8a$.

$8a - 7 + 7 = 17 + 7$ ← Add 7 to both sides of the equation.

$8a = 24$

$\frac{8a}{8} = \frac{24}{8}$ ← Divide both sides of the equation by 8.

$a = 3$

2. $4(x + 6) - 15 = 21$

$4(x) + 4(6) - 15 = 21$ ← Multiply each term in the parentheses by 4.

$4x + 24 - 15 = 21$

$4x + 9 = 21$ ← Combine like terms: $24 - 15 =$ 9.

$4x + 9 - 9 = 21 - 9$ Subtract from both sides of the equation by 9.

$4x = 12$

$\frac{4x}{4} = \frac{12}{4}$ ← Divide both sides of the equation by 4.

$x = 3$

Solve.

3. $9b + 6 - 5b = 18$ — $b = 3$

4. $2y - 7 + y = 8$ — $y = 5$

5. $-5c - 12 - 5c = 8$ — $c = -2$

6. $2(r - 3) + 6 = 14$ — $r = 7$

7. $8 + 5(s - 1) = 18$ — $s = 3$

8. $6(x + 3) + 38 = 2$ — $x = -9$

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