NAME

Module 3 Solving Linear Equations of One Variable
Lesson 4 Solving Two-Step Linear Equations

Solve and check.

1. $17P + 8 = 110$ **P = 6**
2. $4f + 4 = 224$ **f = 55**
3. $3R + 5 = -139$ **R = –48**
4. $21w - 3 = 102$ **w = 5**
5. $-32A - 8 = -136$ **A = 4**
6. $11Q - 3 = 118$ **Q = 11**
7. $T \div 6 + 4 = 24$ **T = 120**
8. $\frac{K}{4} + 7 = 27$ **K = 80**
9. $\frac{V}{7} + 2 = -1$ **V = –21**
10. $Y \div 4 - 4.5 = 7$ **Y = 46**
11. $\frac{x}{5} - 7 = 13$ **x = 100**
12. $\frac{W}{3} - 8 = 14$ **W = 66**
13. $5(H + 8) = 80$ **H = 8**
14. $-8(3 + m) = -64$ **m = 5**
15. $-6(d - 3) = -36$ **d = 9**
16. $14(T - 4) = 112$ **T = 12**
17. $\frac{N - 5}{3} = 2$ **N = 11**
18. $\frac{B - 4}{4} = 5\frac{3}{4}$ **B = 27**
19. $\frac{X + 7}{4} = 7$ **X = 21**
20. $\frac{P + 18}{2} = 18.5$ **P = 19**

Journal

1. Explain how you work backwards to solve a two-step equation.
2. What would happen if you were to solve the equation $3x - 5 = 19$ by doing division first?
3. Describe the steps you would use to solve the equation, $\frac{m}{2} - 3 = 6$.
4. What properties allow you to solve the equation $\frac{z}{2} - 9 = 4$?
5. Design a problem that could be solved in two steps.

Cumulative Review

Solve the following equations. Check your answers.

1. $\frac{9r}{4} + 5 = 8$ **$r = \frac{4}{3}$ or $1\frac{1}{3}$**
2. $6y + 9 = 23$ **$y = \frac{7}{3}$**
3. $\frac{b}{8} + 23 = -9$ **b = –256**
4. $39m - 33 = 5$ **$m = \frac{38}{39}$**

True or false, $x = 5$ is a solution to the following equations.

5. $3x + 7 = 22$ **True**

6. $2x - 19 = 11$ **False**

7. $\frac{x}{10} + \frac{7}{2} = 4$ **True**

8. $9x - 23 = 1$ **False**

9. $-5x + 5 = -10$ **False**

10. $\frac{x}{2} + \frac{4}{3} = 3\frac{5}{6}$ **True**

Possible Journal Answers

1. The first step in solving two-step linear equations is to add or subtract in order to get the equation in the form (coefficient)(variable) = constant. Now you can multiply or divide through to isolate the variable.
2. By the rules of equality, you can do this. Divide $3x - 5 = 19$ by 3 on each side of the equation. $x - \frac{5}{3} = \frac{19}{3}$. By the Addition Property of Equality $x = \frac{19}{3} + \frac{5}{3} = 8$.
3. Add 3 to each side. $\frac{m}{2} = 9$. Multiply through by 2. $m = 18$.
4. By the Addition Property of Equality $\frac{z}{2} = 13$. By the Multiplication Property of Equality $z = 26$.
5. $36q + 56 = 5$ could be solved in two steps. $36q = -51$ and $q = \frac{-51}{36} = \frac{-17}{12} = -1\frac{5}{12}$.