NAME _____ DATE _____ PERIOD _____

3-2 Study Guide and Intervention

Solving Addition and Subtraction Equations

Remember, equations must always remain balanced. If you subtract the same number from each side of an equation, the two sides remain equal. Also, if you add the same number to each side of an equation, the two sides remain equal.

Example 1 **Solve $x + 5 = 11$. Check your solution.**

$x + 5 = 11$ Write the equation.
$-5 = -5$ Subtract 5 from each side.
$x = 6$ Simplify.

Check $x + 5 = 11$ Write the equation.
$6 + 5 \stackrel{?}{=} 11$ Replace x with 6.
$11 = 11$ ✓ This sentence is true.

The solution is 6.

Example 2 **Solve $15 = t - 12$. Check your solution.**

$15 = t - 12$ Write the equation.
$+12 = +12$ Add 12 to each side.
$27 = t$ Simplify.

Check $15 = t - 12$ Write the equation.
$15 \stackrel{?}{=} 27 - 12$ Replace t with 27.
$15 = 15$ ✓ This sentence is true.

The solution is 27.

Exercises

Solve each equation. Check your solution.

1. $h + 3 = 14$ **11** **2.** $m + 8 = 22$ **14** **3.** $p + 5 = 15$ **10** **4.** $17 = y + 8$ **9**

5. $w + 4 = -1$ **−5** **6.** $k + 5 = -3$ **−8** **7.** $25 = 14 + r$ **11** **8.** $57 + z = 97$ **40**

9. $b - 3 = 6$ **9** **10.** $7 = c - 5$ **12** **11.** $j - 12 = 18$ **30** **12.** $v - 4 = 18$ **22**

13. $-9 = w - 12$ **3** **14.** $y - 8 = -12$ **−4** **15.** $14 = f - 2$ **16** **16.** $23 = n - 12$ **35**