

**Two-Step Equations: Integers**

Sheet 1

Solve each equation.

1)  $5n + \underset{-5}{5} = 45_{-5}$

$5n = 40$   
 $\div 5 \quad \div 5$

$n = 8$

3)  $4(\overset{\curvearrowright}{g} - 1) = 24$

$4g - 4 = 24$   
 $+4 \quad +4$

$4g = 28$   
 $\div 4 \quad \div 4$

$g = 7$

5)  $-40 = 12x + 8$   
 $-8 \quad -8$

$-48 = 12x$   
 $\div 12 \quad \div 12$

$-4 = x$

7)  $13 = \frac{w-14}{2}$   $\times 2$

$26 = w - 14$   
 $+14 \quad +14$

$40 = w$

9)  $-9 = -11 + \frac{b}{8}$   
 $+11 \quad +11$

$8 \times 2 = \frac{b}{8} \times 8$

$16 = b$

2)  $\frac{y}{6} - 3 = -11$   
 $+3 \quad +3$

$6 \times \frac{y}{6} = -8 \times 6$

$y = -48$

4)  $15 \times \frac{v+9}{15} = 0 \times 15$

$v + 9 = 0$   
 $-9 \quad -9$

$v = -9$

6)  $-2p - 3 = -19$   
 $+3 \quad +3$

$-2p = -16$   
 $\div -2 \quad \div -2$

$p = 8$

8)  $36 = 1 + 7a$   
 $-1 \quad -1$

$35 = 7a$   
 $\div 7 \quad \div 7$

$5 = a$

10)  $2q + 10 = 7q$   
 $-2q \quad -2q$

$10 = 5q$   
 $\div 5 \quad \div 5$

$2 = q$

**Multi-Step Equations: Integers**

Level 1: S1

Solve each equation.

$$1) \quad 3(x-4) = 2(-2x+1)$$

$$3x - 12 = -4x + 2$$

$$\begin{array}{r} 3x - 12 = -4x + 2 \\ +12 \qquad \qquad +12 \\ \hline 3x = -4x + 14 \\ +4x \qquad +4x \\ \hline 7x = 14 \\ \div 7 \qquad \div 7 \end{array} \quad \boxed{x=2}$$

$$3) \quad 9 = \frac{v+4}{v+12}$$

$$5) \quad -3(7p+5) = 27$$

$$-21p - 15 = 27$$

$$\begin{array}{r} -21p - 15 = 27 \\ +15 \qquad +15 \\ \hline -21p = 42 \\ \div -21 \qquad \div -21 \\ \hline p = -2 \end{array}$$

$$7) \quad 2x \frac{-8-3k}{2} = 11 \times 2$$

$$-8 - 3k = 22$$

$$\begin{array}{r} -8 - 3k = 22 \\ +8 \qquad \qquad +8 \\ \hline -3k = 30 \\ \div -3 \qquad \div -3 \\ \hline k = -10 \end{array}$$

$$2) \quad 8q + 6 = 4q - 14$$

$$\begin{array}{r} 8q + 6 = 4q - 14 \\ -4q \qquad -4q \\ \hline 4q + 6 = -14 \\ -6 \qquad -6 \\ \hline 4q = -20 \\ \div 4 \qquad \div 4 \\ \hline q = -5 \end{array}$$

$$4) \quad 7 - (5t - 13) = -25$$

$$\begin{array}{r} 7 - (5t - 13) = -25 \\ -7 \qquad \qquad -7 \\ \hline -(5t - 13) = -32 \\ -5t + 13 = -32 \\ -13 \qquad -13 \\ \hline -5t = -45 \\ \div -5 \qquad \div -5 \\ \hline t = 9 \end{array}$$

$$6) \quad 14 + 13y = 20y - 21$$

$$\begin{array}{r} 14 + 13y = 20y - 21 \\ -13y \qquad -13y \\ \hline 14 = 7y - 21 \\ +21 \qquad +21 \\ \hline 35 = 7y \\ \div 7 \qquad \div 7 \\ \hline 5 = y \end{array}$$

$$8) \quad -15b + 21 + 5b = -19$$

$$\begin{array}{r} -15b + 21 + 5b = -19 \\ -10b + 21 = -19 \\ -21 \qquad -21 \\ \hline -10b = -40 \\ \div -10 \qquad \div -10 \\ \hline b = 4 \end{array}$$