**1** Solve all 6 equations. Show all work. For #3 and 6, justify each step using math properties.

**1.** $-3(x - 4) = -9(x - 1)$

**2.** $8x - 2(x + 3) = 4x + 2$

**3.** $\frac{-2x + 1}{2} + 6 = \frac{3x}{2} - 10$

**4.** $12x - 4(\frac{1}{2}x - 5) = \frac{1}{3}(6x - 15)$

**5.** $\frac{7(x - 1)}{4} - \frac{3}{4} = -8x + \frac{3}{4}$

**6.** $-4(2x - 9) + 6(-x + 1) = -8x - 5(3x - \frac{6}{5})$

**2** Determine if the equation has one solution, no solution, or infinite solutions. Show your work.

**1.** $-2(x - 3) + 5 = -6(x + 1) + 4x$

**2.** $\frac{3x + 1}{2} + 6 = \frac{1}{2}(3x - 4) + \frac{17}{2}$

**3.** $20x - 2(x + 10) = -(5 - 2x)$

**4.** $\frac{3}{5}(x - 12) = -4(x + 9) + 1$

**5.** $-7(x - 1) = -15x + 8(x + 2)$

**6.** $\frac{8(x - 3)}{2} + 5x = 9(x - 1) - 3$

**3** Convert between degrees Fahrenheit and degrees Celsius using the literal equation given. If necessary, round the answer to the nearest hundredth.

Before completing #1-6, solve the equation for F.

$$C = \frac{5}{9}(F - 32)$$

**1.** 72°F

**2.** −11°F

**3.** 102.6°F

**4.** 25°C

**5.** 42°C

**6.** −3.4°C

**4** Convert each equation from standard form to slope-intercept form.

**1.** $4x + 6y = 48$

**2.** $3x - 5y = 25$

**3.** $-4x + 9y = 45$

**4.** $6x - 2y = -52$

**5.** $-x - 8y = 96$

**6.** $12x + 28y = -84$

**5** Convert each equation from slope-intercept form to standard form.

**1.** $y = 5x + 8$

**2.** $y = -4x + 2$

**3.** $y = \frac{2}{3}x - 6$

**4.** $y = -\frac{1}{2}x - 3$

**5.** $y = -5x - 13$

**6.** $y = \frac{3}{4}x + 10$

**6** Solve each equation for the variable indicated.

**1.** The formula for the area of a triangle is $A = \frac{1}{2}bh$. Solve the equation for $h$.

**2.** The formula for the area of a trapezoid is $A = \frac{1}{2}(b_1 + b_2)h$. Solve the equation for $b_1$.

**3.** The formula for the volume of a cylinder is $V = \pi r^2 h$. Solve the equation for $h$.

**4.** The formula for the volume of a pyramid is $V = \frac{1}{3}lwh$. Solve the equation for $w$.

**5.** The Ideal Gas Law is $pV = nRT$. Solve the equation for $T$.

**6.** Solve the literal equation $Z = \frac{4X}{Y^2} + 3W$ for $X$.