• **Solve** $C = \frac{5}{9}(F - 32)$ **for** F

Solution:

$$C = \frac{5}{9}(F - 32) \quad \text{Original Equation}$$
$$9 \cdot C = 9 \cdot \frac{5}{9}(F - 32) \quad \text{Multiply both side by } 9$$
$$9C = 5(F - 32) \quad \text{Simplify}$$
$$9C = 5F - 160 \quad \text{Use distributive property}$$
$$9C + 160 = 5F - 160 + 160 \quad \text{Add } 160 \text{ on both side}$$
$$9C + 160 = 5F \quad \text{Simplify}$$
$$\frac{9C + 160}{5} = \frac{5F}{5} \quad \text{Divide both side by } 5$$
$$F = \frac{9}{5}C + 32$$

• **Solve** $R = \frac{kA(T_1 + T_2)}{d}$ **for** T_1

Solution:

$$R = \frac{kA(T_1 + T_2)}{d} \quad \text{Original Equation}$$
$$d \cdot R = d \cdot \frac{kA(T_1 + T_2)}{d} \quad \text{Multiply both sides by } d$$
$$dR = kA(T_1 + T_2) \quad \text{Simplify}$$
$$dR = kAT_1 + kAT_2 \quad \text{Use distributive property}$$
$$dR - kAT_2 = kAT_1 + kAT_2 - kAT_2 \quad \text{Subtract } kAT_2 \text{ from both sides}$$
$$dR - kAT_2 = kAT_1 \quad \text{Simplify}$$
$$\frac{dR}{kA} - \frac{kAT_2}{kA} = \frac{kAT_1}{kA} \quad \text{Divide both sides by } kA$$
$$\frac{dR}{kA} - T_2 = T_1$$

• **Solve** $I = \dfrac{E_a - E_q}{R}$ **for** E_a

Solution:

$$I = \frac{E_a - E_q}{R}$$ Original Equation

$$R \cdot I = R \cdot \frac{E_a - E_q}{R}$$ Multiply both sides by R

$$RI = E_a - E_q$$ Simplify

$$RI + E_q = E_a - E_q + E_q$$ Add E_q on both sides

$$RI + E_q = E_a$$ Simplify

$$E_a = RI + E_q$$

• **Solve** $\dfrac{1}{a} + b = \dfrac{c}{a}$ **for** a

Solution:

$$\frac{1}{a} + b = \frac{c}{a}$$ Original Equation

$$a \cdot \frac{1}{a} + a \cdot b = a \cdot \frac{c}{a}$$ Multiply both sides by a

$$1 + ab = c$$ Simplify

$$1 + ab - 1 = c - 1$$ Subtract 1 on both sides

$$ab = c - 1$$ Simplify

$$\frac{ab}{b} = \frac{c}{b} - \frac{1}{b}$$ Divide both sides by b

$$a = \frac{c}{b} - \frac{1}{b}$$

• **Solve** $T = \dfrac{D - d}{L}$ **for** D

Solution:

$$T = \frac{D - d}{L}$$ Original Equation

$$L \cdot T = L \cdot \frac{D - d}{L}$$ Multiply both sides by L

$$LT = D - d$$ Simplify

$$LT + d = D - d + d$$ Add d on both sides

$$D = LT + d$$