

Solving Equations

Distributive Property

Simplifies the expression, removes the parentheses

After distributive, combine (add) like terms

$$\begin{aligned} -2(6x - y) - 4y &= 8 \\ -12x + 2y - 4y &= 8 \\ -12x - 2y &= 8 \end{aligned}$$

Inverse Property of Addition

Add the inverse (opposite), Value goes to zero

$$\begin{aligned} -12x - 2y &= 8 \\ +12x \quad +12x & \\ \hline -2y &= 12x + 8 \end{aligned}$$

Inverse Property of Multiplication

Apply the inverse (opposite) operation, Value reduces to one

Variable is multiplied, divide
Variable is divided, multiply
Multiplied by fraction, multiply by reciprocal

$$\begin{aligned} -2y &= 12x + 8 \\ \frac{-2y}{-2} &= \frac{12x}{-2} + \frac{8}{-2} \\ y &= -6x - 4 \end{aligned}$$