

## Distributive Property with Fractions

Simplify each of the following:

$$\frac{1}{3}(6 + \frac{3}{2}) \quad 2 + \frac{3}{6} = 2 + \frac{1}{2} = \left(2\frac{1}{2}\right)$$

$$\frac{1}{4}(-12 + 8) \quad -3 + 2 = \left(-1\right)$$

$$\frac{2}{3}(-3 - 9) \quad -\frac{2}{3} \cdot 6 - \frac{18}{3} = -2 - 6 = \left(-8\right)$$

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I can **apply the number properties**.

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### DEFINING SUBTRACTION AND DIVISION

Subtraction is defined as adding the opposite. The opposite, or inverse, of any number  $b$  is  $-b$ . If  $b$  is positive, then  $-b$  is negative. If  $b$  is negative, then  $-b$  is positive.

Division is defined as multiplying the reciprocal. The reciprocal, or inverse, of any nonzero number  $b$  is  $\frac{1}{b}$ .

Find the value of the missing variable. Then name the property used. (You also may use definition of subtraction and definition of division.)

1) Find  $x$ .  $-5 = -5 + x$   
 $\begin{array}{r} -5 \\ +5 \\ \hline 0 = x \end{array}$   $x = 0$

2) Find  $b$ .  $a - b = a + 2.85$   
 $\begin{array}{r} a \\ -a \\ \hline -b = 0 + 2.85 \end{array}$   $b = -2.85$

3) Find  $y$ .  $x - \frac{1}{4} = x + y$   
 $\begin{array}{r} x \\ -x \\ \hline 0 - \frac{1}{4} = y \end{array}$   $y = -\frac{1}{4}$

4) Find  $x$ .  $24 - 48 = 6(x - 8)$   
 $\begin{array}{r} 24 - 48 = 6x - 48 \\ +48 \quad +48 \\ \hline 24 + 0 = 6x \end{array}$   $\frac{6x}{6} = \frac{24}{6}$   $x = 4$

EXIT

Find  $a$ .  $12 + 10 = 2(a + 5)$   
 $\begin{array}{r} 12 + 10 = 2a + 10 \\ -10 \quad -10 \\ \hline 2 = 2a \end{array}$   $\frac{2}{2} = \frac{2a}{2}$   $a = 1$