$$\frac{x}{a} + b = c$$

Name: _____   Date: _____

Learning Goal 6.1	I can solve linear equations.

Recall Solve using the inverse operations. Show all work for full credit.

a. $2 \times \dfrac{x}{2} = -3 \times 2$

$x = -6$

b. $\overset{3\times}{}1 = \dfrac{-c}{3} \times 3$

$-1 \times 3 = -c \times -1$

$-3 = c$

$c = -3$

To solve a **two – step equation**

1. Add or subtract away the constansts

← BEDMAS →

2. Multiply or divide away the coefficient

↳ the # mult. or dividing a variable.

Example Model each of the following equations, then solve.

a. $\dfrac{x}{2} + 3 = 5$

$-3 \quad -3$

$2 \times \dfrac{x}{2} = 2 \times 2$

$x = 4$

$2 \times 2x = 8 \times 2$

$\dfrac{4x}{-1} = \dfrac{16}{-1}$

$\dfrac{-4x}{2} = \dfrac{-16}{2}$

$\dfrac{-2x}{-2} = \dfrac{-8}{-2}$

$x = 4$

b. $1 = \dfrac{-c}{3} - 2$

$+2 \qquad +2$

$-3 \times 3 = \dfrac{-c}{3} \times -3 \qquad 3 \times 3 = \dfrac{-c}{3} \times 3$

$-9 = c \qquad\qquad -1 \times 9 = -c \times -1$

$\qquad\qquad\qquad -9 = c$

$c = -9$

Assignment   p. 392 #4 – 6, 8, 10, 11, 13, 14, 16   Quiz Next Day!

$$\frac{x}{a} + b = c$$

Example Solve the following by applying the opposite operation. Check your answer.

a. $\frac{x}{4} + 12 = -8$

$-12 \quad -12$

$4 \times \frac{x}{4} = -20 \times 4$

$x = -80$

CHECK

LS	RS
$\frac{-80}{4} + 12$	-8
$= -20 + 12$	
$= -8$	

b. $\frac{y}{-3} + 4 = 10$

$-4 \quad -4$

$-3 \times \frac{y}{-3} = 6 \times -3$

$y = -18$

CHECK

LS	RS
$\frac{-18}{-3} + 4$	10
$= 6 + 4$	
$= 10$	

c. $2 = \frac{-p}{4} - 3$

$+3 \qquad +3$

$4 \times 5 = \frac{-p}{4} \times 4$

$-1 \times 20 = -p \times -1$

$p = -20$

CHECK

LS	RS
2	$\frac{+(+20)}{4} - 3$
	$= 5 - 3$
	$= 2$

d. $-3 = 4 - \frac{k}{6}$

$-4 \quad -4$

$6 \times -7 = -\frac{k}{6} \times 6$

$-1 \times -42 = -k \times -1$

$42 = k$

$k = +42$

CHECK

LS	RS
-3	$4 - \frac{42}{6}$
	$= 4 - 7$
	$= -3$

Example Ellie is 30 years old. She is six years older than half of Dwight's age. How old is Dwight? Define your variable, set up an algebraic equation and solve.

$d = $ Dwight's age

$30 = 6 + \frac{d}{2}$

$-6 \quad -6$

$2 \times 24 = \frac{d}{2} \times 2$

$48 = d$

Dwight is 48 years old.