

Name: \_\_\_\_\_

Date: \_\_\_\_\_

<b>Learning Goal 6.1</b>	I can solve linear equations.
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**Recall** Solve using the inverse operations. Show all work for full credit.

a.  $x + 2 = -13$   
 $\quad -2 \quad -2$   
 $\quad \quad x = -15$

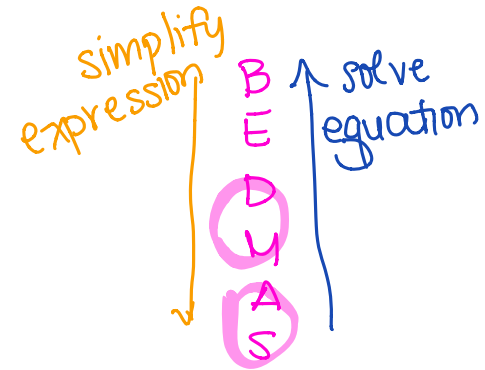
b.  $x - 7 = -3$   
 $\quad +7 \quad +7$   
 $\quad \quad x = -10$   
 $\quad \quad \quad 4$

c.  $\frac{-5x}{-5} = \frac{25}{-5}$   
 $\quad \quad \quad x = -5$

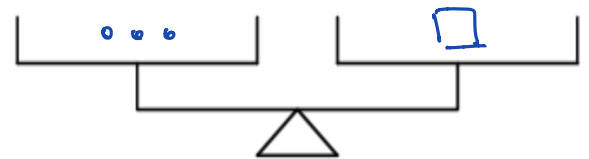
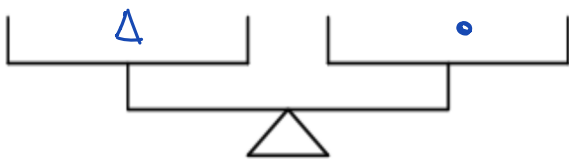
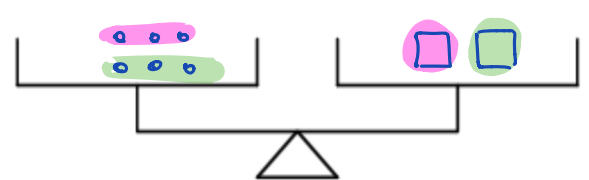
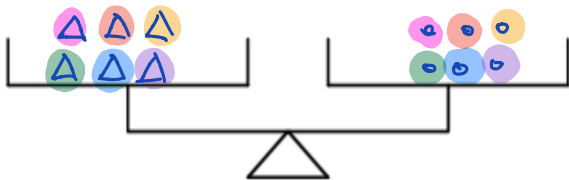
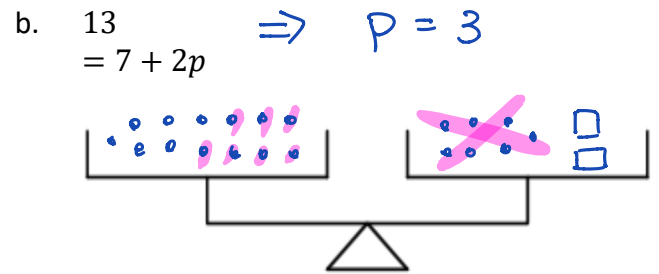
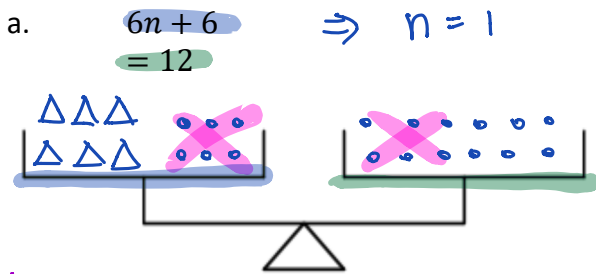
d.  $\frac{8x}{8} = -3 \times 8$   
 $\quad \quad \quad x = -24$

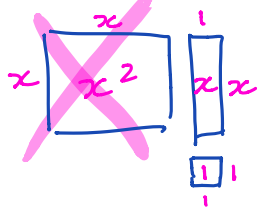
To solve a **two – step equation**

1. Add or subtract away any constants (a term without a variable)
2. Multiply or divide away anything working on the variable.



**Example** Solve the following equations using a balance scale to model it.

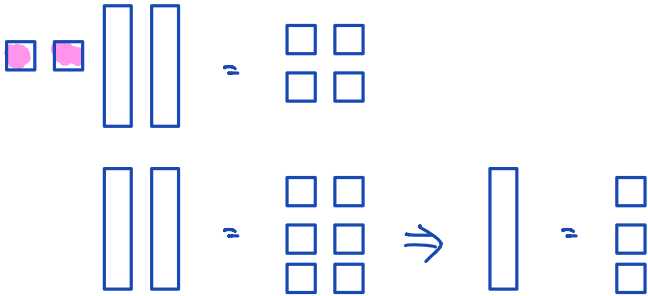




**Example** Solve the following equations using algebra tiles to model it.

a.  $2x - 2 = 4 \Rightarrow x = 3$

b.  $2 = 3x - 1$



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

BEDMAS

a.  $-3x + 7 = 19$   
 $-7 \quad -7$

$\frac{-3x}{-3} = \frac{12}{-3}$   
 $x = -4$

CHECK

LS	RS
$-3(-4) + 7$	$19$
$= +12 + 7$	
$= 19$	

b.  $+4 + 26g = -48$   
 $-4 \quad -4$

$\frac{26g}{26} = \frac{-52}{26}$   
 $g = -2$

CHECK

LS	RS
$4 + 26(-2)$	$-48$
$= 4 + (-52)$	
$= -48$	

c.  $24 = 14 - 5x$   
 $-14 \quad -14$

$\frac{10}{-5} = \frac{-5x}{-5}$   
 $-2 = x$   
 $x = -2$

CHECK

LS	RS
$24$	$14 - 5(-2)$
	$= 14 + 10$
	$= 24$

d.  $40 = 5x - 10$

$5x - 10 = 40$   
 $+10 \quad +10$   
 $\frac{5x}{5} = \frac{50}{5}$   
 $x = 10$

CHECK

LS	RS
$40$	$5(10) - 10$
	$= 50 - 10$
	$= 40$

**Example** A cow sleeps 7 hours a day. This amount of sleep is 1 hour less than twice the amount an elephant sleeps a day. How long does an elephant sleep? Define the variable, set up the equation and solve.

let  $p$  = the number of hours a day the elephant sleeps

$7 = 2p - 1$   
 $+1 \quad +1$   
 $\frac{8}{2} = \frac{2p}{2}$   
 $4 = p$

The elephant sleeps 4 hours a day.