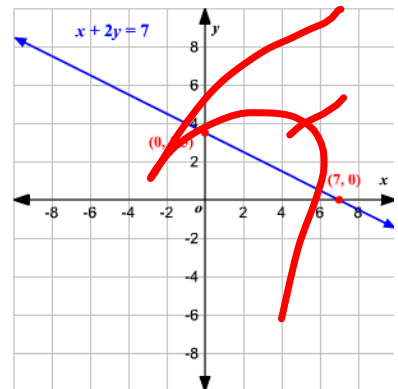
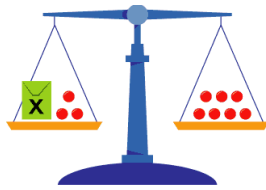
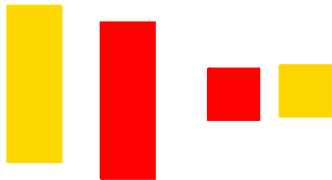


MATH
is
FUN!

Unit 6

$$3x + 7 = 19$$





Linear Equations and Graphing



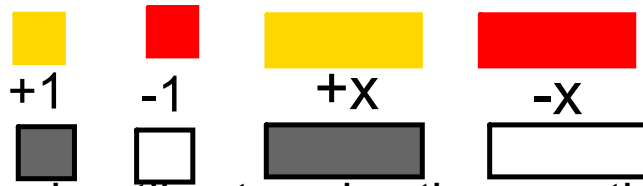
Section 6.1

Solving Equations using Algebra Tiles

Remember:

| | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
|  +1 |  +X shaded any positive variable (x, n, \dots) |
|  -1 |  UNshaded any negative variable ($-x, -n, \dots$) -X |

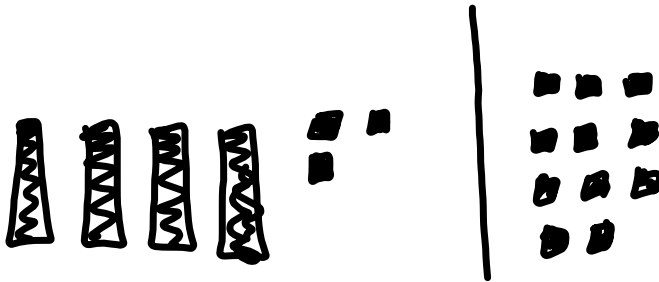
Also remember that a positive and a negative together gives 0.



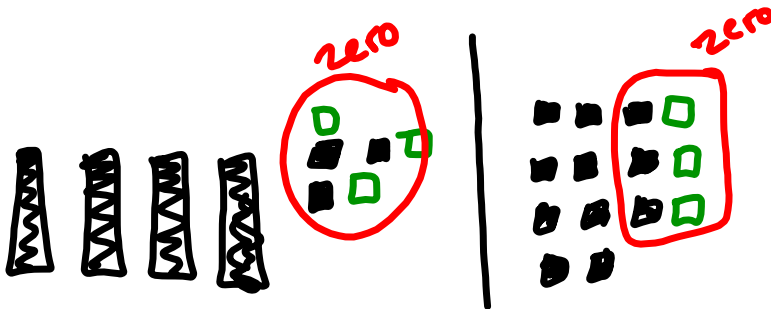
+ \Rightarrow + - \Rightarrow - } Mrs. O'Keefe

Use algebra tiles to solve the equations. Verify the solutions.

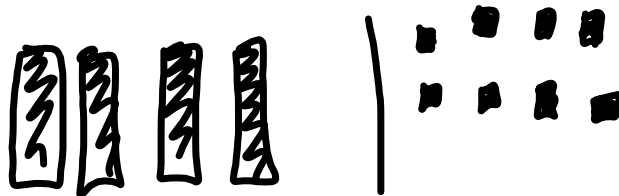
1. $4x + 3 = 11$



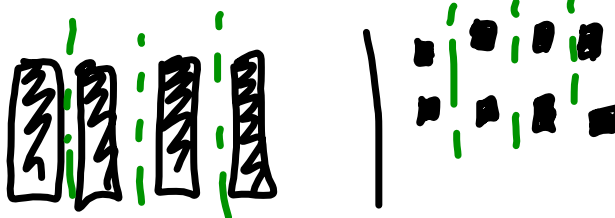
$4x + 3 = 11$



$4x + 3 - 3 = 11 - 3$
zero zero



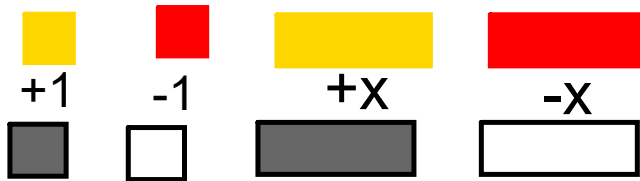
$4x = 8$



$\frac{4x}{4} = \frac{8}{4}$

$x = 2$

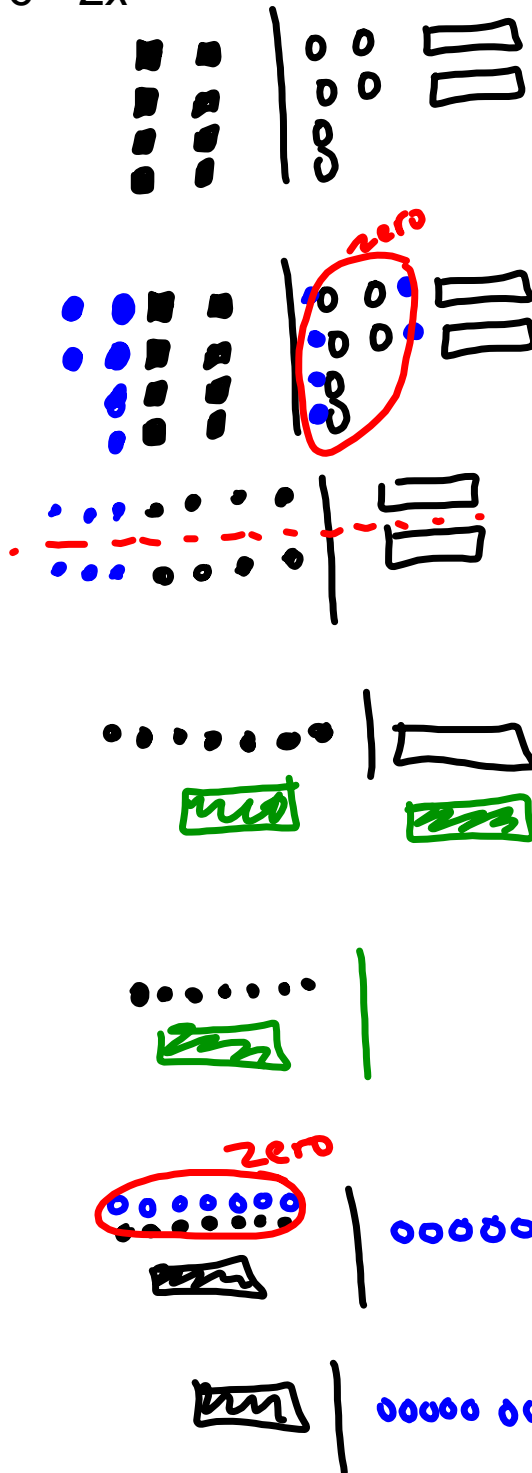




Use algebra tiles to solve the equations. Verify the solutions.

2. $8 = -6 - 2x$

$8 = -6 - 2x$



$8 + 6 = -6 + 6 - 2x$

$14 = -2x$

$7 = -x$
 $\div -1 \quad \downarrow \div -1$
 $-7 = x$

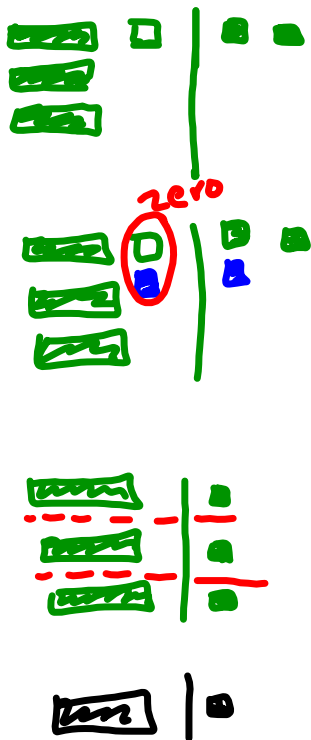
$x + 7 = 0$

$x = -7$



Use algebra tiles to solve the equations. Verify the solutions.

3. $3x - 1 = 2$



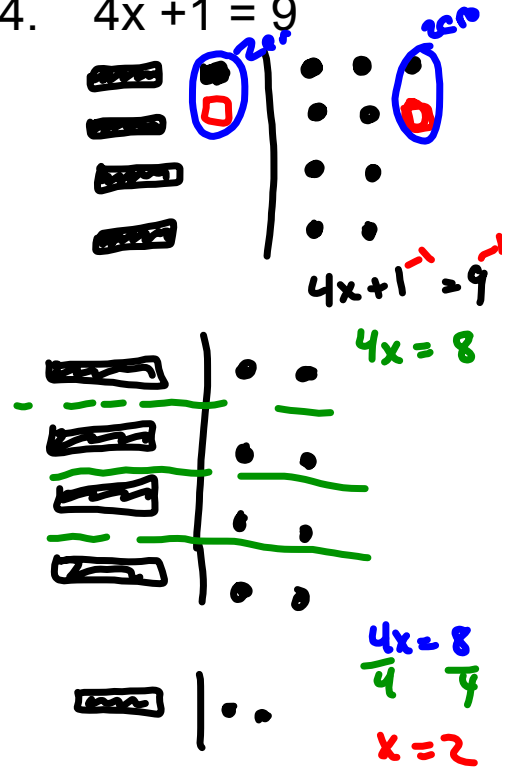
$$3x - 1 = 2$$

$$3x = 3$$

$$\frac{3x}{3} = \frac{3}{3}$$

$$x = 1$$

4. $4x + 1 = 9$



$$4x + 1 = 9$$

$$4x = 8$$

$$\frac{4x}{4} = \frac{8}{4}$$

$$x = 2$$



Jodee is a contestant in the spell-a-thon at her school.

A contestant receives 3 points for every word spelled correctly.

Because of a technical penalty, Jodee loses 5 points.

She now has 19 points.

How many words has Jodee spelled correctly?

Use tiles

$$3w - 5 = 19$$

use algebra

$$3w - \cancel{5}^{+5} = 19 + 5$$

$$3w = 24$$

$$\frac{3w}{3} = \frac{24}{3}$$

$$w = 8$$

+ shaded

- unshaded



Class/Homework

Page 324

~~#5, #6, #7~~

model #5 with pictures
use algebra for #6 & #7

Model 5a
6a
Algebra 5bc
6bc
7

check

3. Describe the operation you would perform to isolate the variable in each equation.

a) $a - 3 = 6$

b) $4 + b = 11$

c) $5c = 30$

d) $\frac{d}{7} = 3$

e) $e + 8 = 17$

f) $-5 + f = 3$

g) $45 = 3g$

h) $8 = \frac{h}{6}$

4. Solve each equation in question 3. Verify the solution each time.

3a) addition

4.

$$a - 3 = 6$$

$$a - 3 + 3 = 6 + 3$$

$$a = 9$$

| | | |
|---------|-------|-----|
| Ls | Check | Rs |
| $a - 3$ | | 6 |
| $9 - 3$ | | |
| 6 | | |

b) $4 + b = 11$

$$b + 4 = 11$$

$$b + 4 - 4 = 11 - 4$$

$$b = 7$$

| | |
|---------|------|
| Ls | Rs |
| $4 + b$ | 11 |
| $4 + 7$ | |
| 11 | |

c) $5c = 30$

$$\frac{5c}{5} = \frac{30}{5}$$

$$c = 6$$

| | |
|--------------|------|
| Ls | Rs |
| $5c$ | 30 |
| 5×6 | |
| 30 | |

d) $\frac{d}{7} = 3$

$$\frac{d}{7} \times 7 = 3 \times 7$$

$$d = 21$$

| | |
|----------------|-----|
| Ls | Rs |
| $\frac{d}{7}$ | 3 |
| $\frac{21}{7}$ | |
| 3 | |

$$e) e + 8 = 17$$

$$e + 8 - 8 = 17 - 8$$

$$e = 9$$

$$\begin{array}{r} \uparrow \\ e + 8 \\ 9 + 8 \\ 17 \end{array} \quad \begin{array}{r} R \\ 17 \end{array}$$

$$f) -5 + f = 3$$

$$-5 + f + 5 = 3 + 5$$

$$f = 8$$

$$\begin{array}{r} \downarrow \\ -5 + f \\ -5 + 8 \\ 3 \end{array} \quad \begin{array}{r} R \\ 3 \end{array}$$

$$g) 45 = 3g$$

$$\frac{45}{3} = \frac{3g}{3}$$

$$15 = g$$

$$\begin{array}{r} \downarrow \\ 45 \\ 3 \end{array} \quad \begin{array}{r} R \\ 3 \\ 3 \times 15 \\ 45 \end{array}$$

$$h) 8 = \frac{h}{6}$$

$$8 \times 6 = \frac{h}{6} \times 6$$

$$48 = h$$

$$\begin{array}{r} \downarrow \\ 8 \end{array} \quad \begin{array}{r} R \\ 6 \\ 48 \end{array}$$

$2x + 2 = 6$

$2x + 2 - 2 = 6 - 2$

$2x = 4$

$\frac{2x}{2} = \frac{4}{2}$

$x = 2$

$3x - 1 = 2$

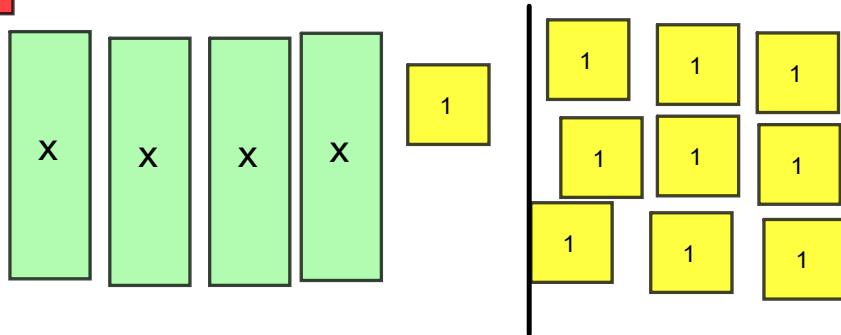
$3x - 1 + 1 = 2 + 1$

$3x = 3$

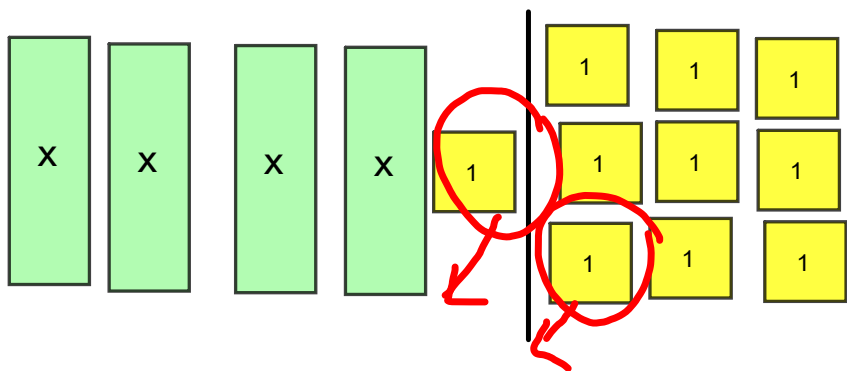
$\frac{3x}{3} = \frac{3}{3}$

$x = 1$

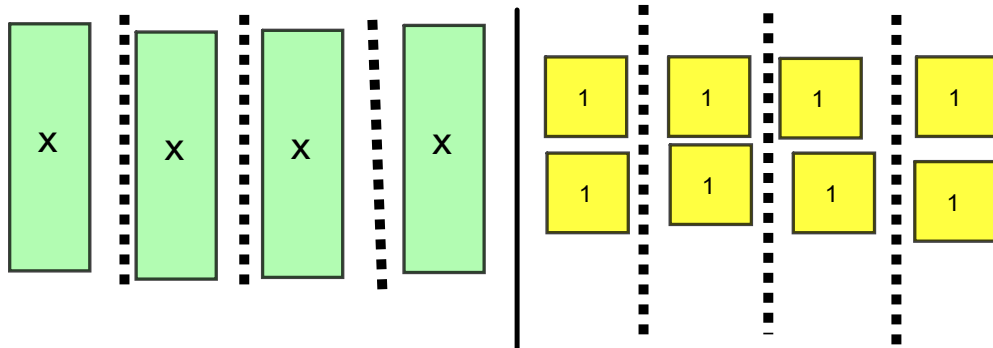
-1



$$4x + 1 = 9$$

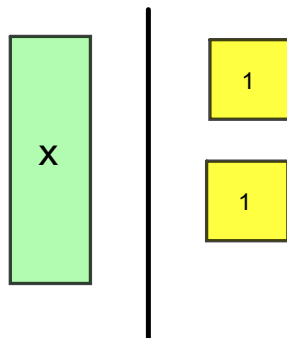


$$4x + 1 - 1 = 9 - 1$$



$$4x = 8$$

$$\frac{4x}{4} = \frac{8}{4}$$



$$x = 2$$

Discuss pages 319 - 323

Homework Read pages 319 -323
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