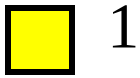
EQUATIONS WITH ALGEBRA TILES

EQUATIONS WITH ALGEBRA TILES

Algebra Tiles

Small Square

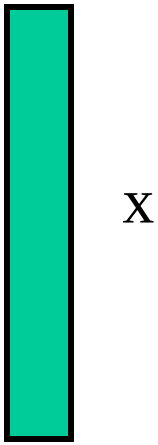


1

1

Value = **1**

Rectangle

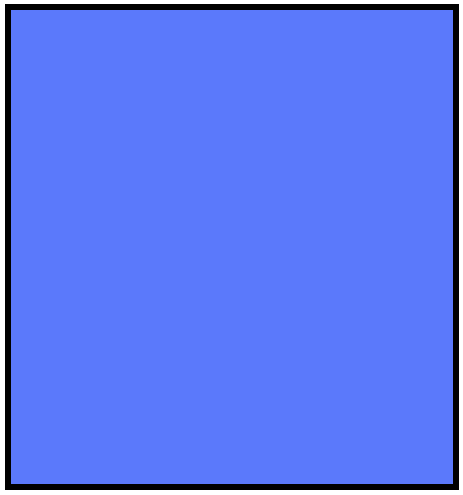


x

1

Value = **x**

Large Square



x

x

Value = $\mathbf{x^2}$

EQUATIONS WITH ALGEBRA TILES

Algebra Tiles

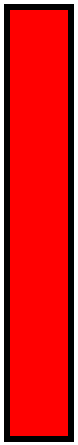
Small Square

-1

1

Value = -1

Rectangle

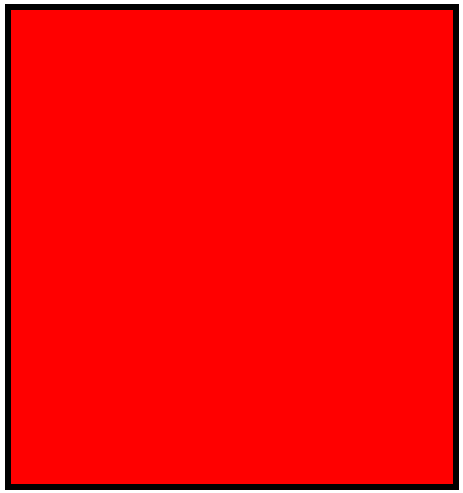


-x

1

Value = -x

Large Square



-x

x

Value = $-x^2$

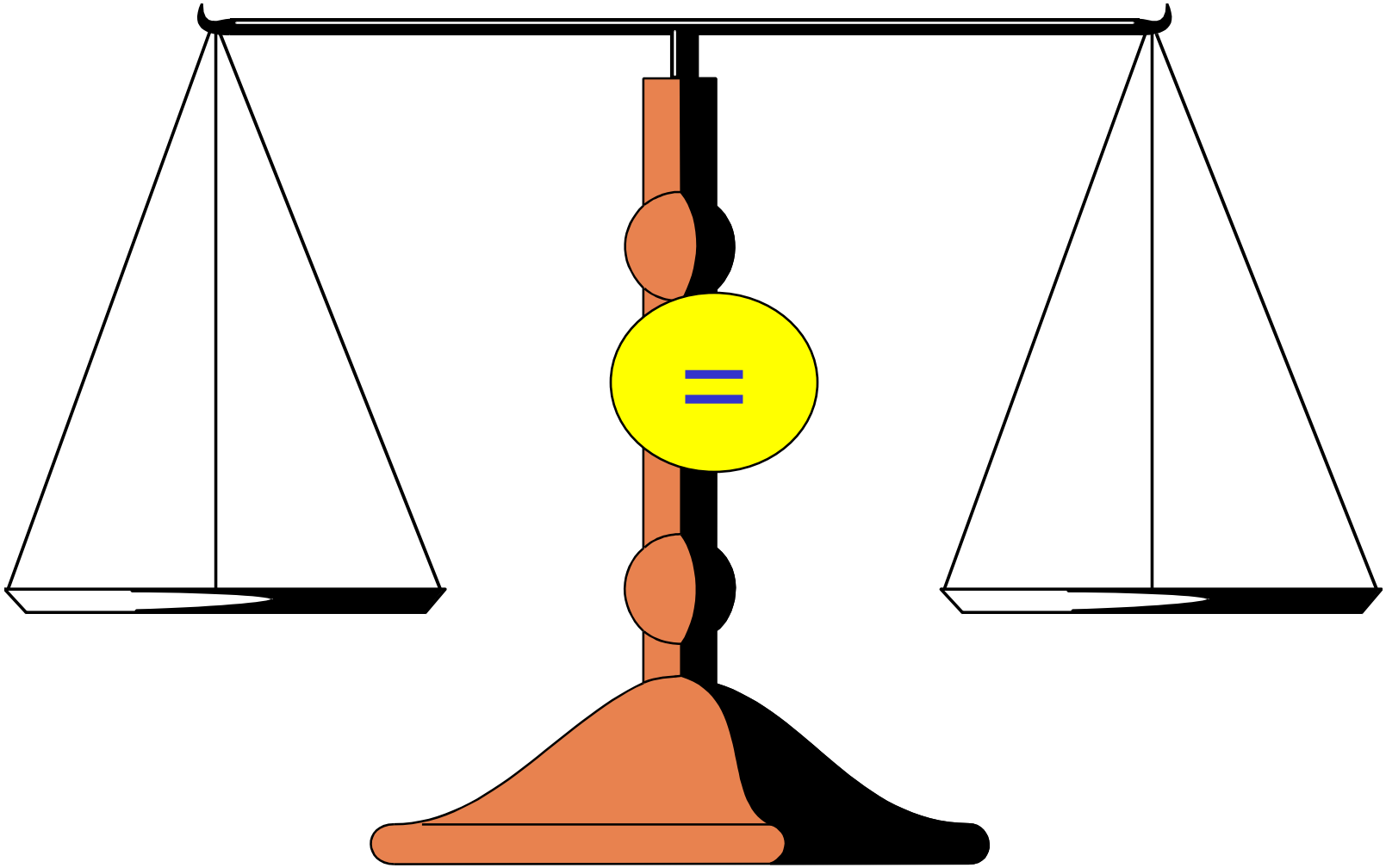
EQUATIONS WITH ALGEBRA TILES

Algebra Tiles

We are going to use **Algebra Tiles** to solve algebraic equations.

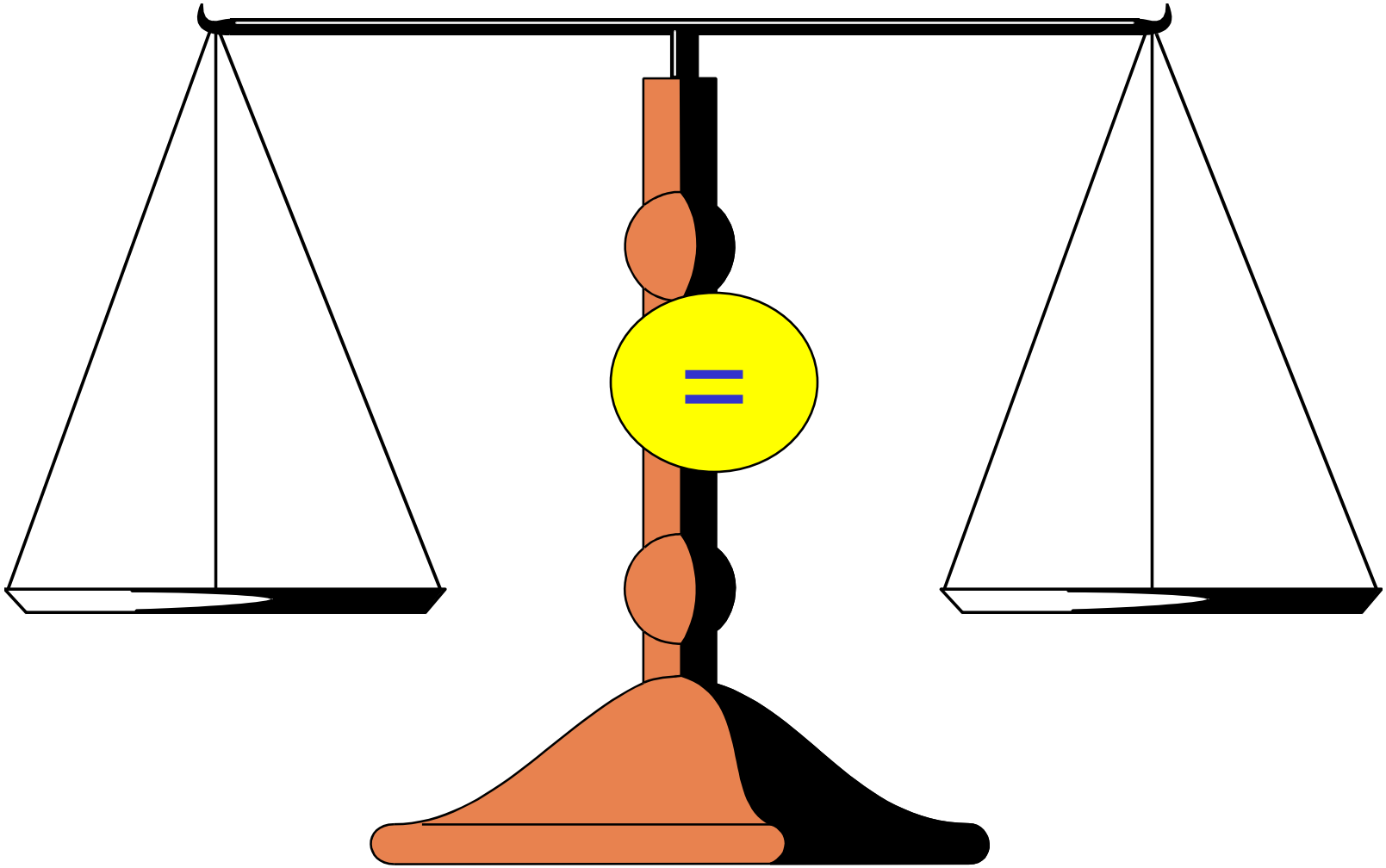
EQUATIONS WITH ALGEBRA TILES

An Equation is like a balance scale.
Everything must be equal on both sides.



EQUATIONS WITH ALGEBRA TILES

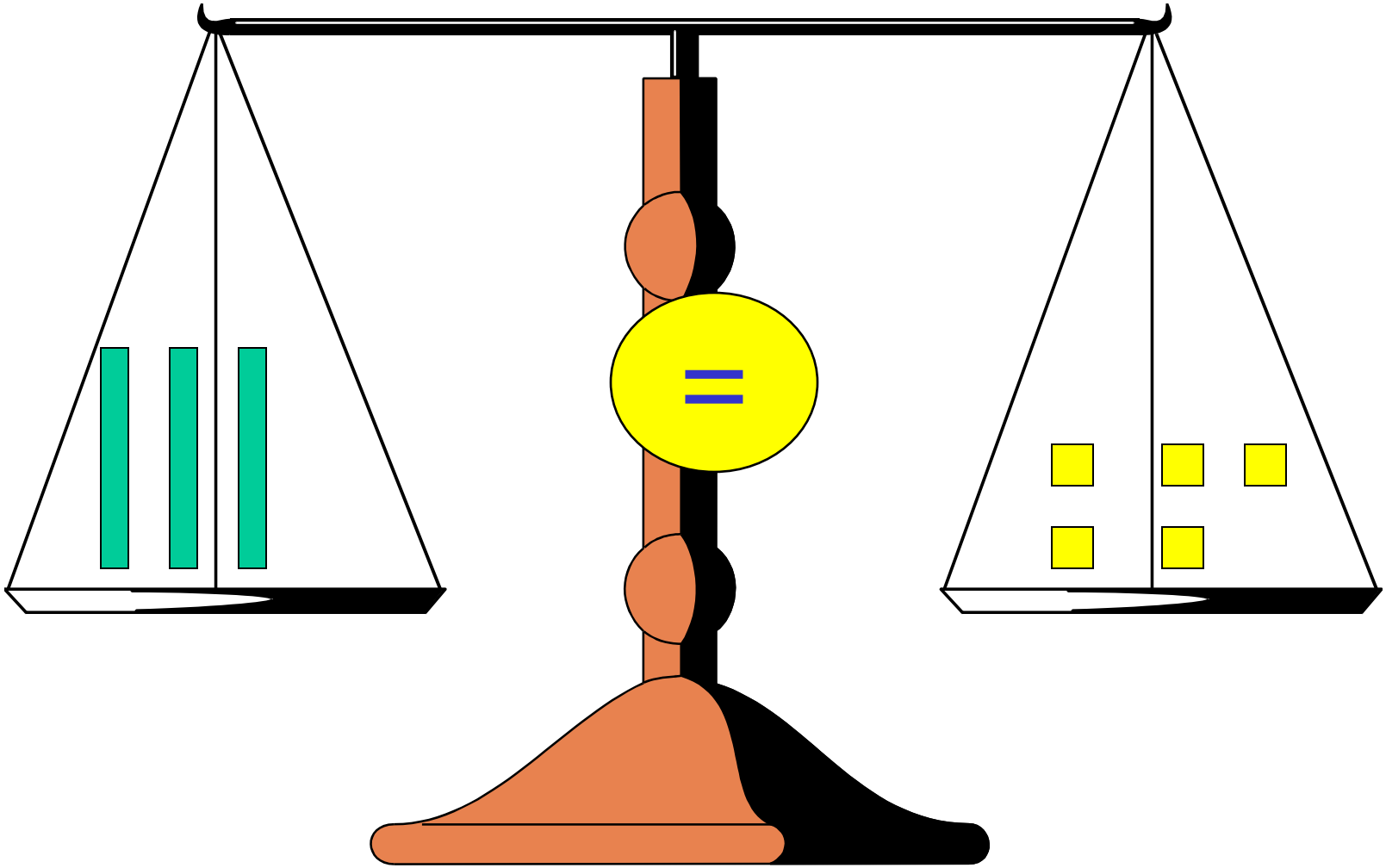
What you do to one side of an equation, you must do to the other side to keep it balanced.



EQUATIONS WITH ALGEBRA TILES

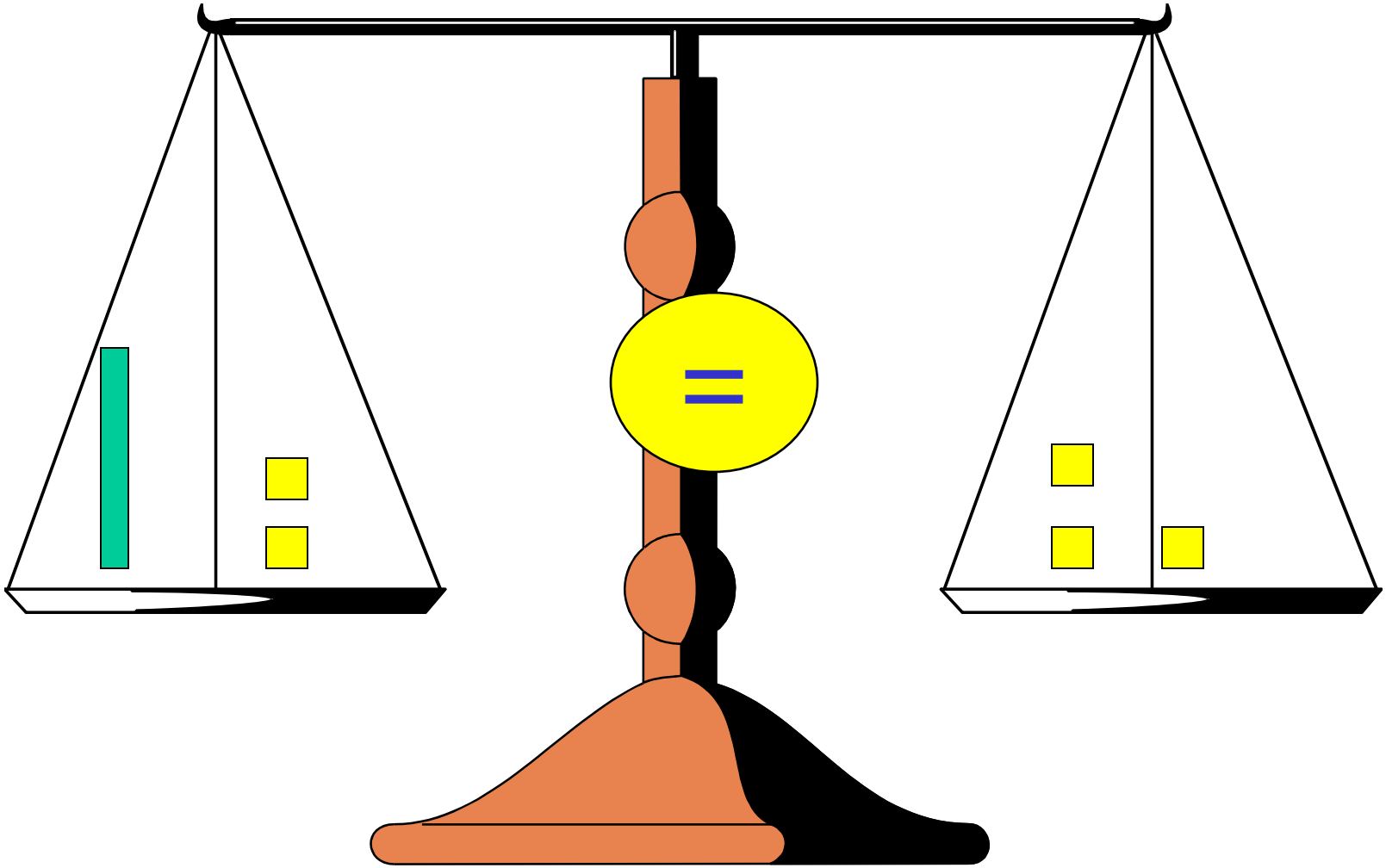
What Equation Is This?

$3x = 5$



EQUATIONS WITH ALGEBRA TILES

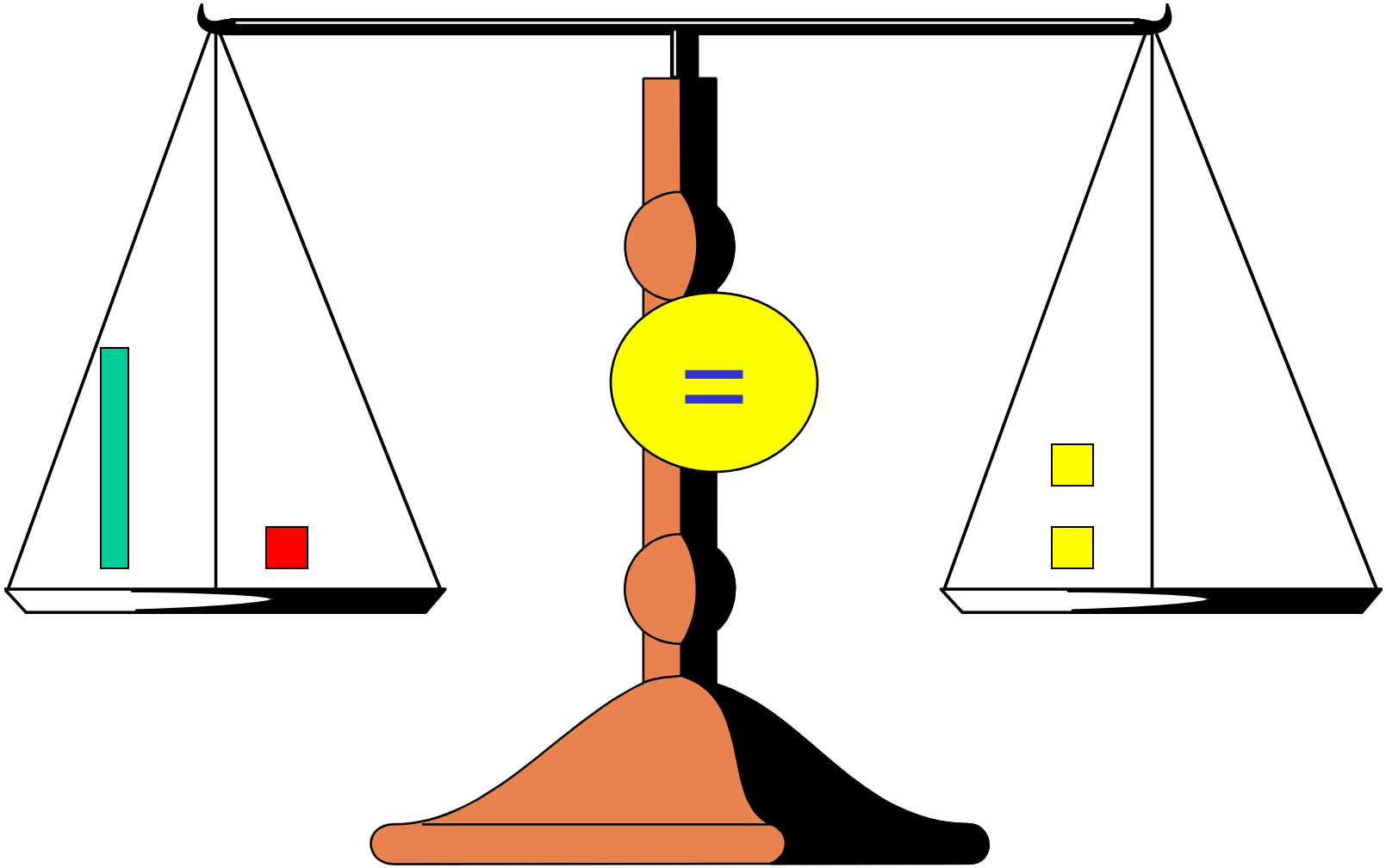
What Equation Is This? $x + 2 = 3$



EQUATIONS WITH ALGEBRA TILES

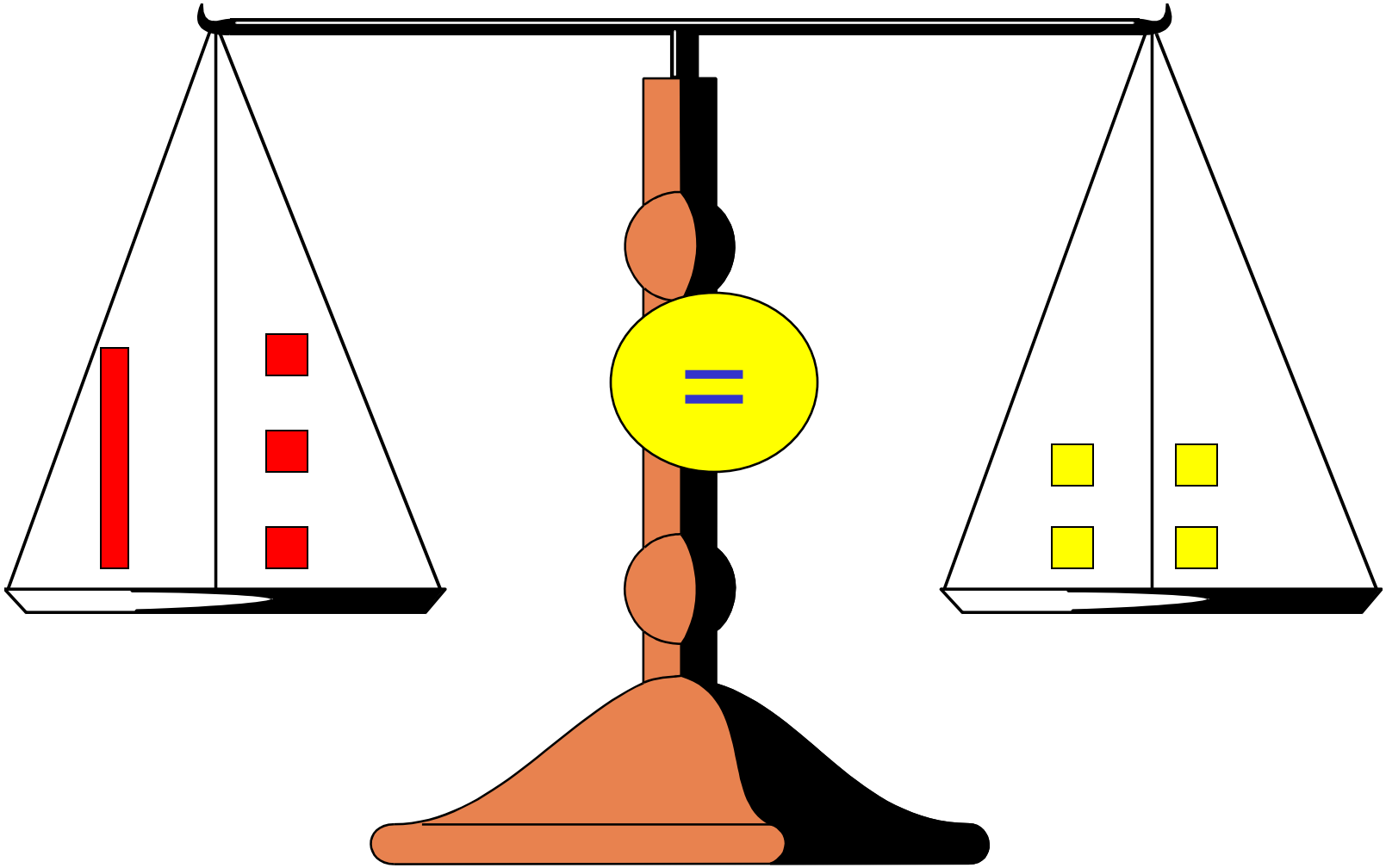
What Equation Is This?

$x - 1 = 2$



EQUATIONS WITH ALGEBRA TILES

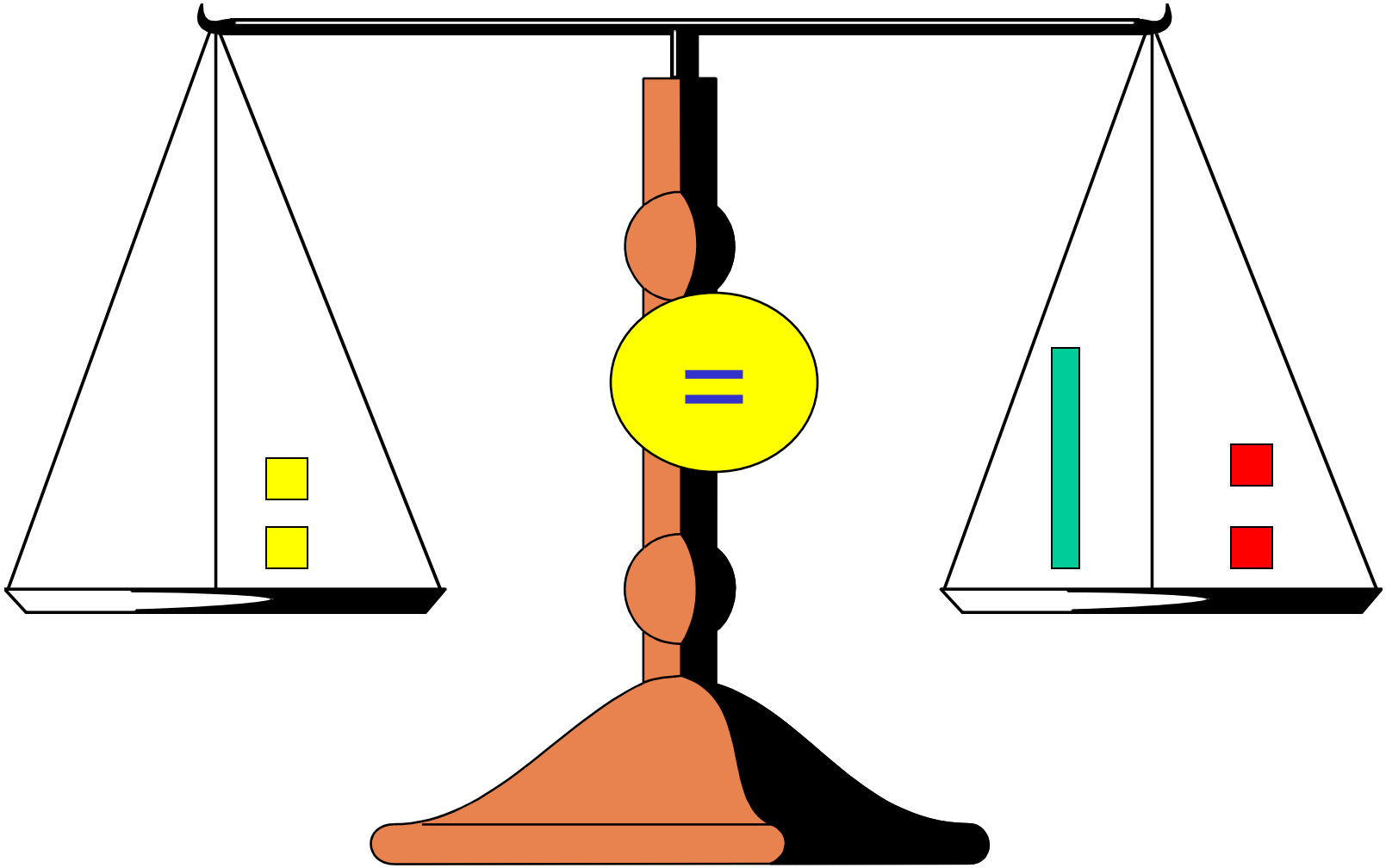
What Equation Is This? $-x - 3 = 4$



EQUATIONS WITH ALGEBRA TILES

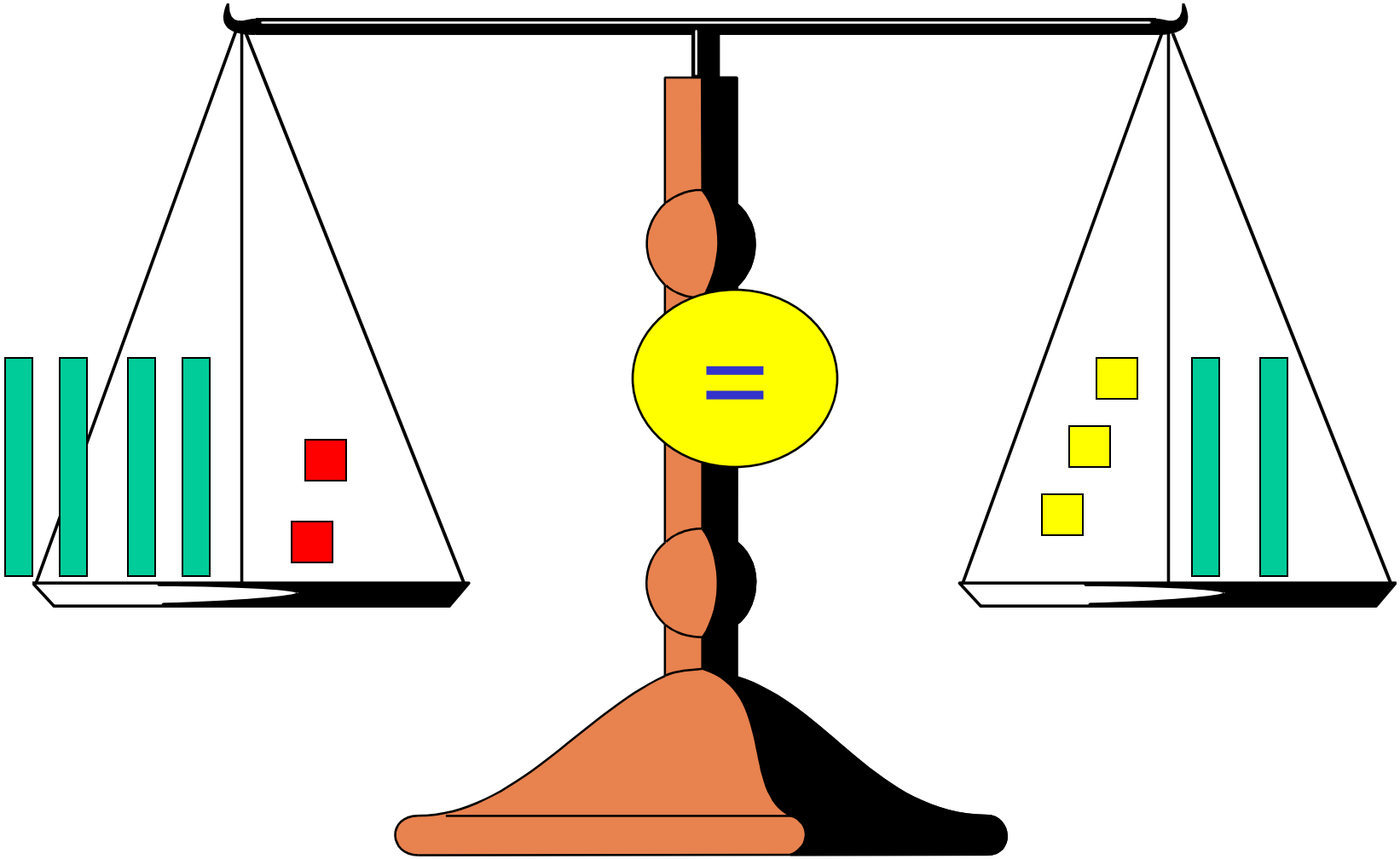
What Equation Is This?

$2 = x - 2$



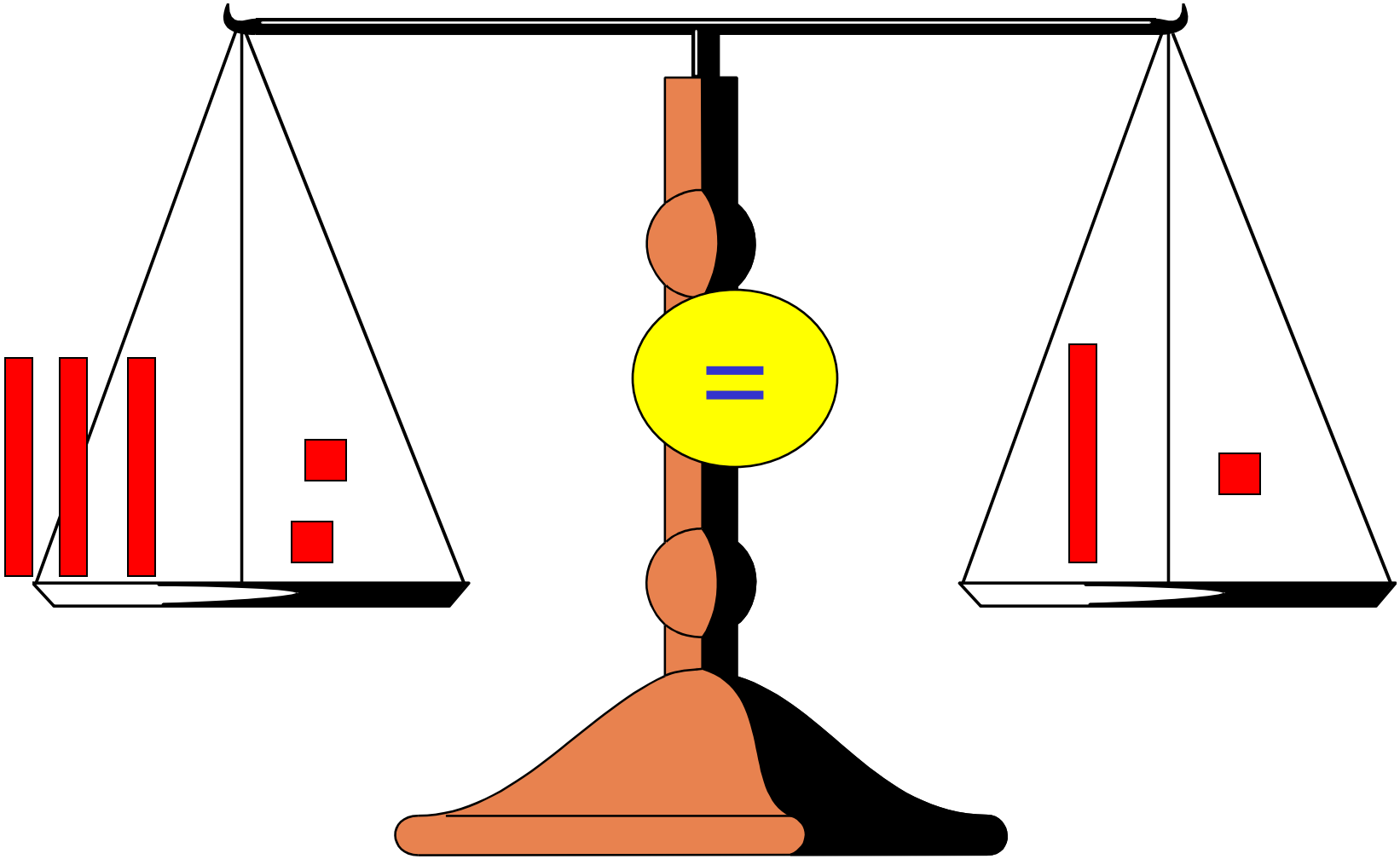
EQUATIONS WITH ALGEBRA TILES

What Equation Is This? $4x-2=2x+3$



EQUATIONS WITH ALGEBRA TILES

What Equation Is This? -3x-2= -x-1

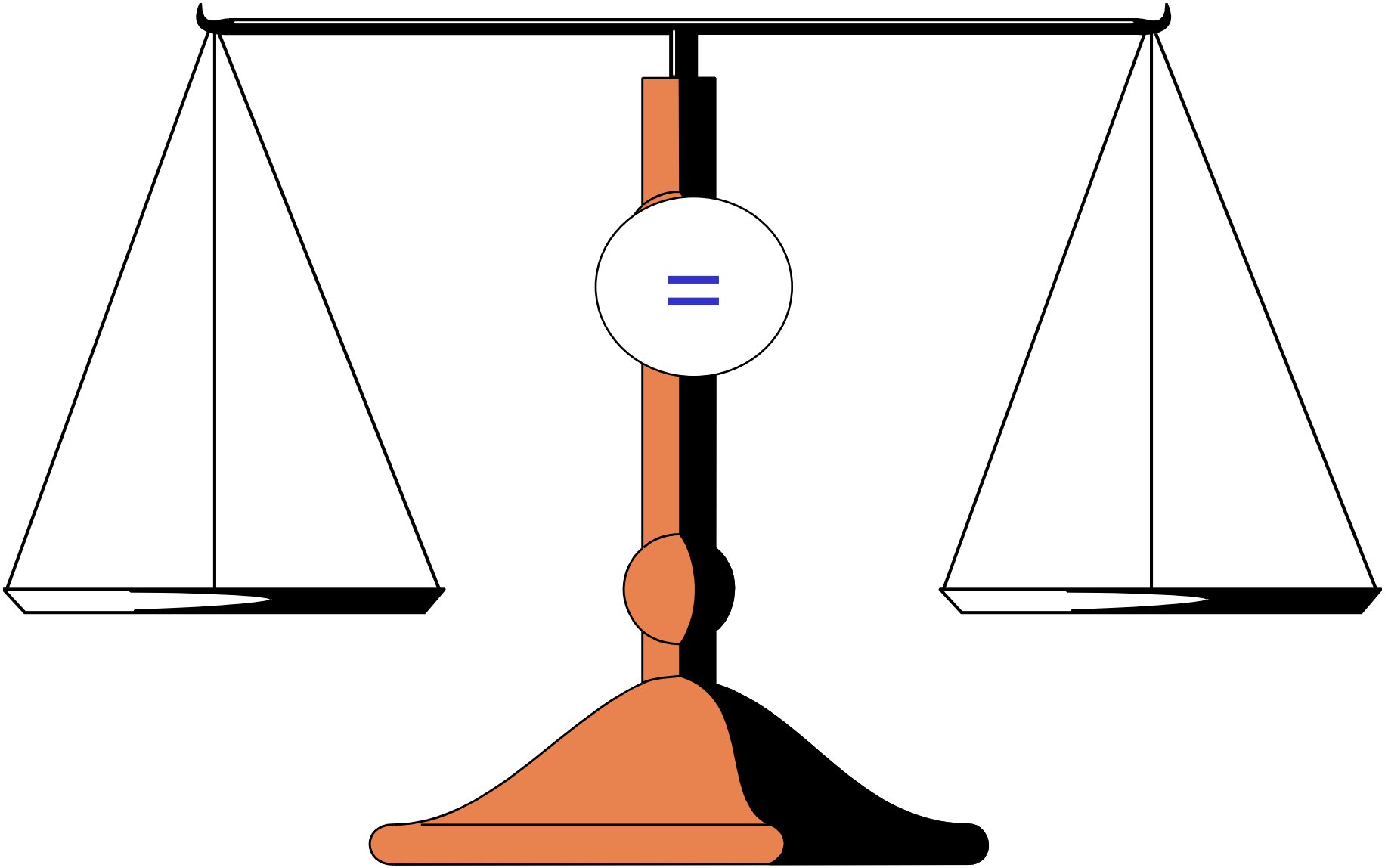


EQUATIONS WITH ALGEBRA TILES

- You are going to get a set of **algebra tiles** to use and a **balance scale worksheet**.

- **Do NOT** write on the balance scale worksheet. I am going to reuse it.

EQUATIONS WITH ALGEBRA TILES

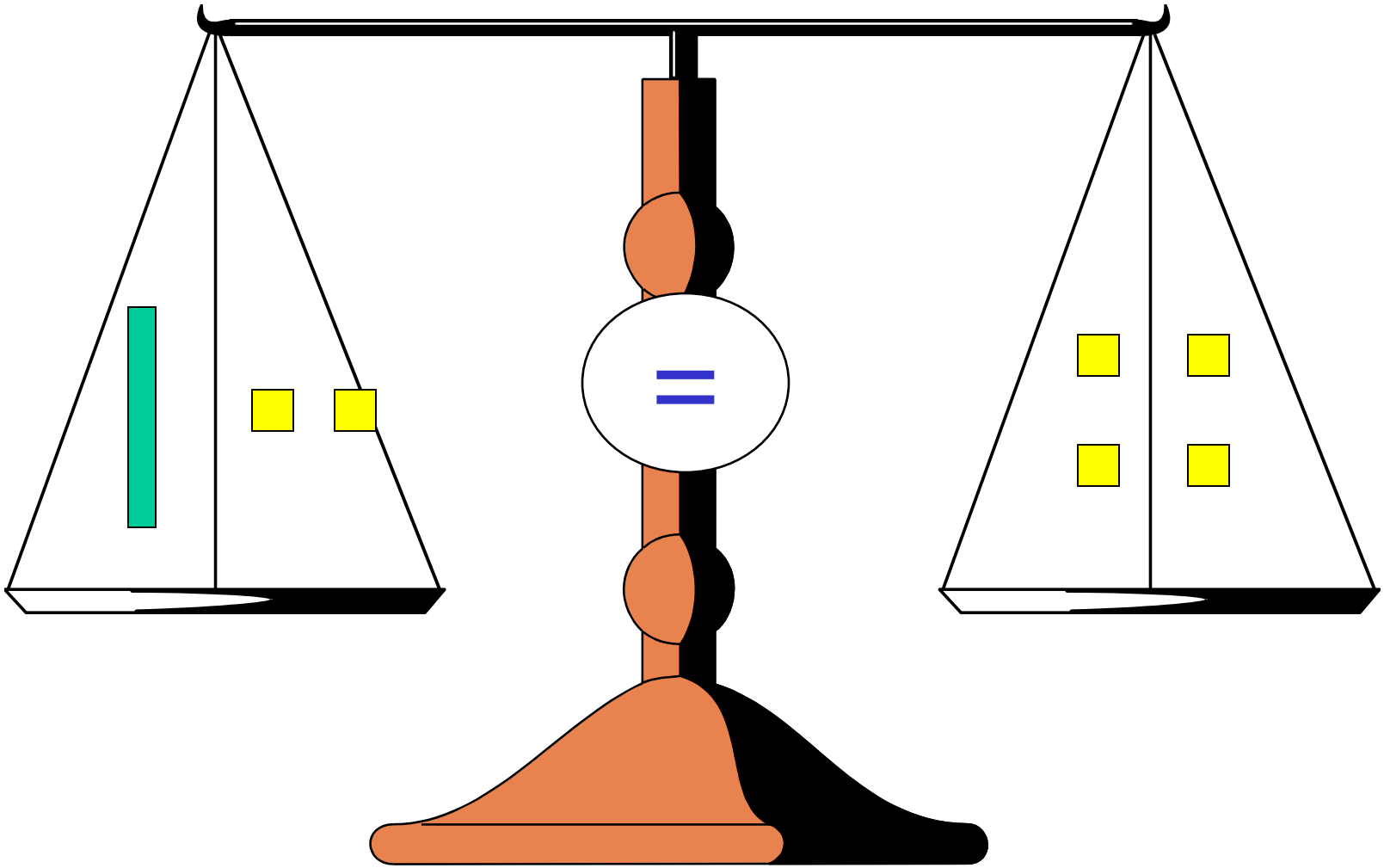


EQUATIONS WITH ALGEBRA TILES

- **Clear your desk!**
- You will only need your **algebra tiles**, and your **balance scale worksheet**.
- You will only need the x's and 1's **not the x^2**

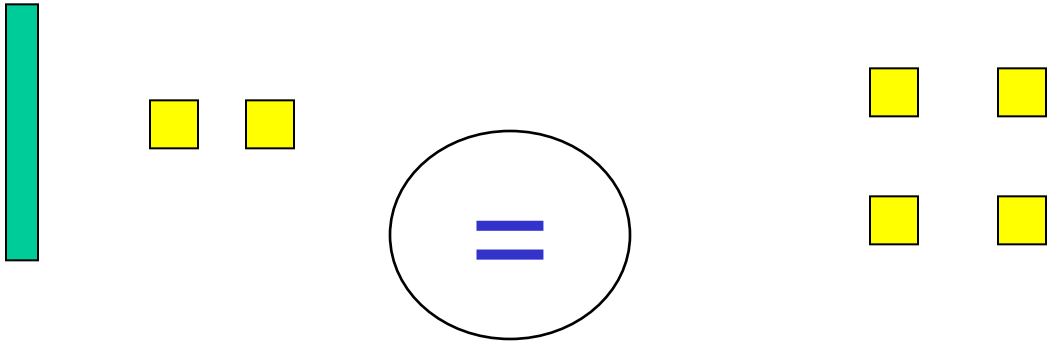
EQUATIONS WITH ALGEBRA TILES

Show me what x + 2 = 4 looks like.



EQUATIONS WITH ALGEBRA TILES

Let's try to solve x + 2 = 4.



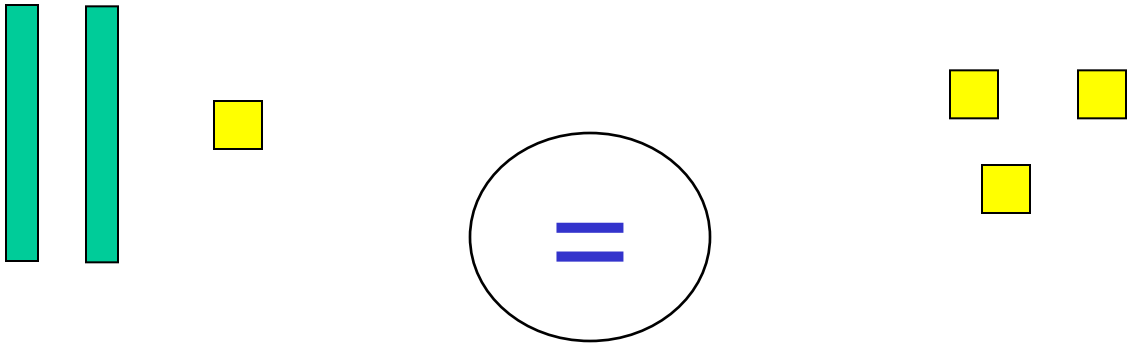
What can I take away from both sides?

Take away +2 from both sides.

x = 2

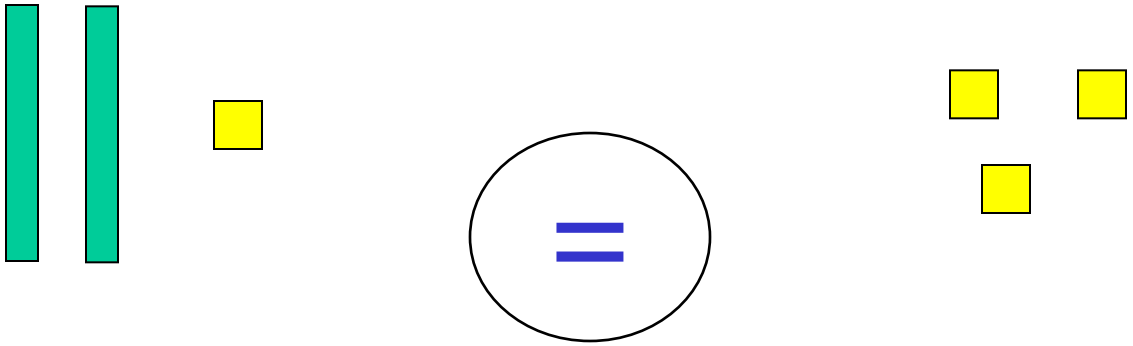
EQUATIONS WITH ALGEBRA TILES

Show me what 2x + 1 = 3 looks like.



EQUATIONS WITH ALGEBRA TILES

Let's solve 2x + 1 = 3



What can I take away from both sides?

Take away +1 from both sides.

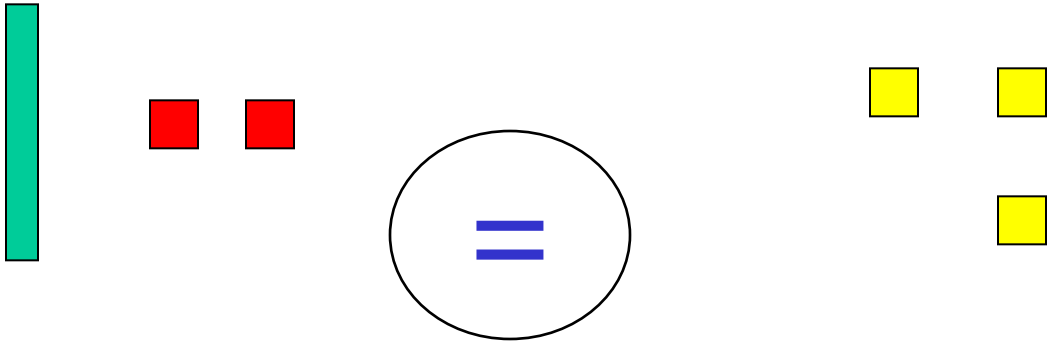
If 2x = 2, how do I solve?

Divide both sides in half.

x = 1

EQUATIONS WITH ALGEBRA TILES

Show me what x - 2 = 3 looks like.

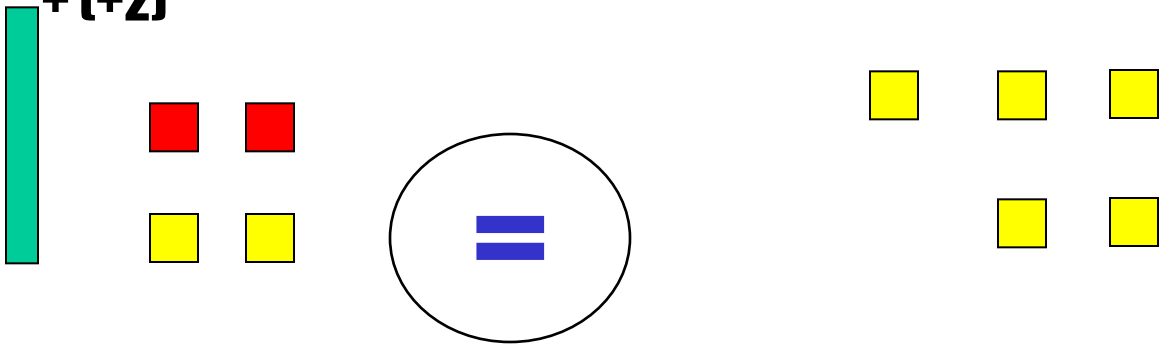


EQUATIONS WITH ALGEBRA TILES

Let's try to solve x - 2 = 3.

They make 0 so take them away.

What happens to -2 + (+2)



I want to get x all by itself.

How do I get rid of -2 ?

Add +2 to both sides.

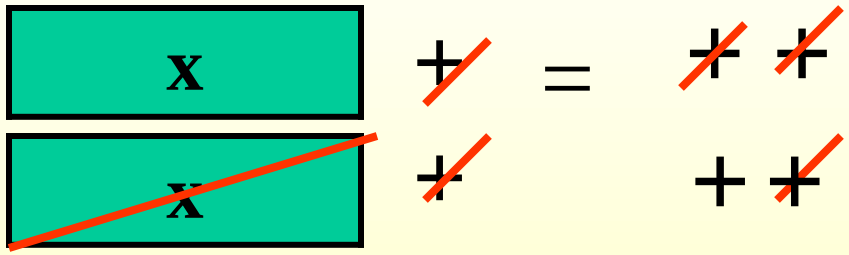
x = 5

EQUATIONS WITH ALGEBRA TILES

Take Out Your Study Guide!!!

#9 Algebra Tile Equations

$$2x + 2 = 4$$



Draw a picture.

Take away 2 from both sides.

Divide both sides in half.

Algebra

$$2x + 2 = 4$$

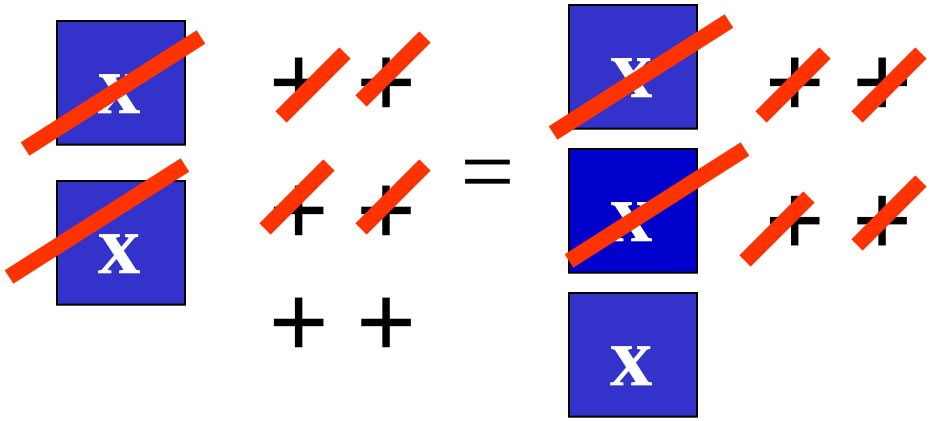
$$-2 \quad = -2$$

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

$$x = 1$$

#10 Algebra Balance Scales

$$2x + 6 = 3x + 4$$



1) Draw a picture.

2) Take away 2x from both sides.

3) Take away 4 from both sides.

Algebra

$$\begin{array}{rcl} 2x + 6 & = & 3x + 4 \\ -2x & = & -2x \\ \hline 6 & = & 1x + 4 \\ -4 & & -4 \\ \hline 2 & = & x \end{array}$$

Name_____

Date_____

Period___

Solving Equations With Algebra Tiles

Let's start your homework.

Put your name, date and period on your handout.

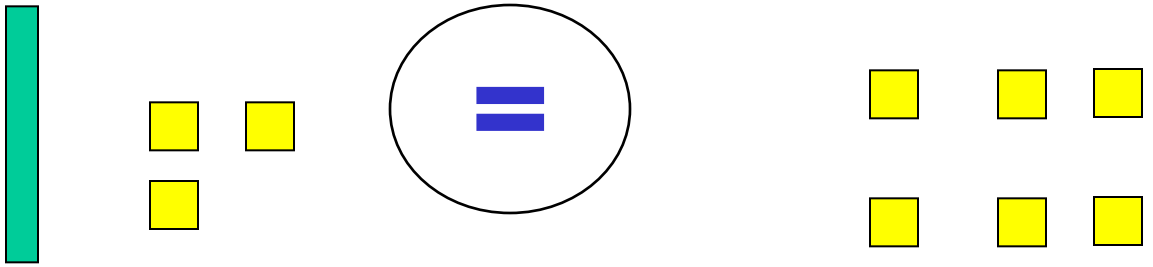
You are going to do the problems with your algebra tiles 1st!

Then you will draw the problem.

Then you will write the algebra equation and solve.

HOMEWORK

Show me problem #1 x + 3 = 6



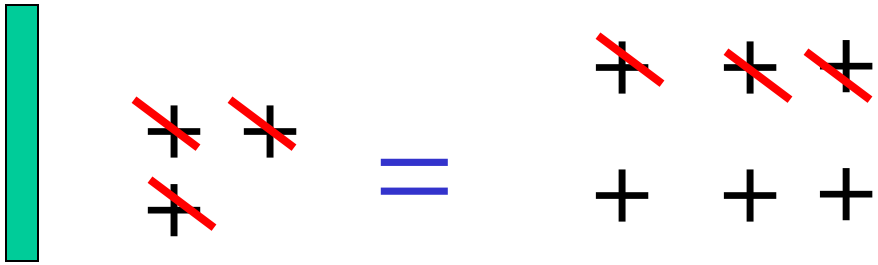
Take +3 away
from both sides.

x = 3

Draw this on your homework paper

HOMEWORK

Draw problem #1 $x + 3 = 6$



Write the algebra steps!

$$x + 3 = 6$$
$$-3 \quad -3$$
$$x = 3$$

☑ $3 + 3 = 6$

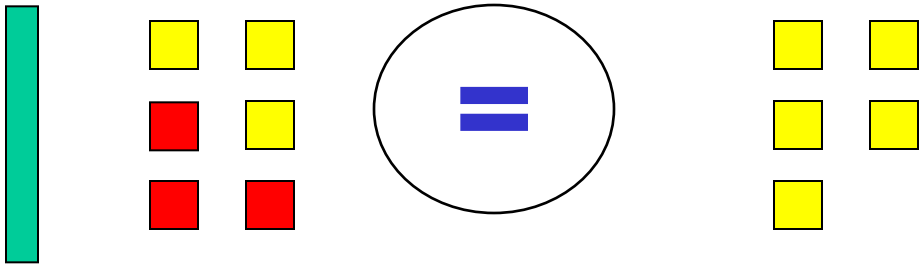
$6 = 6$

HOMEWORK

Show me problem #2 $x - 3 = 2$

They make 0 so take them away.

What happens to -3 + (+3) ?



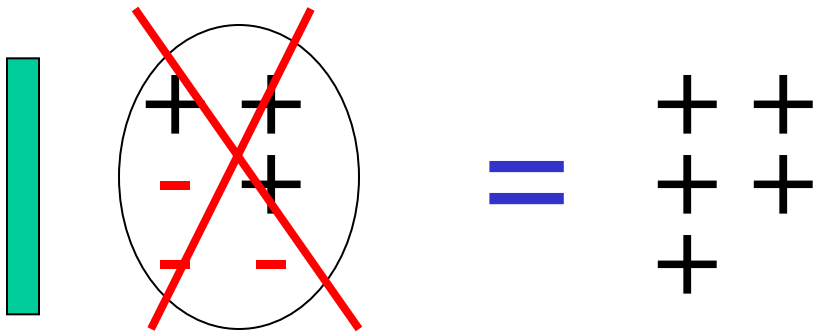
Add +3 to both sides.

$x = 5$

Draw this on your homework paper

HOMEWORK

Draw problem #2 $x - 3 = 2$



Add +3 to both sides.

Cross off your zeros

Algebra

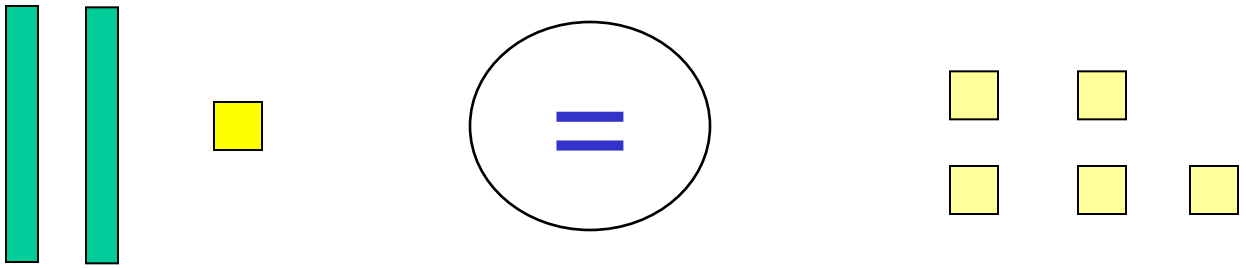
$$x - 3 = 2$$
$$+3 \quad +3$$
$$x = 5$$

☑ $5 - 3 = 2$

$2 = 2$

HOMEWORK

Show me problem #3 $2x + 1 = 5$



What can I take away from both sides?

Take away +1 from both sides.

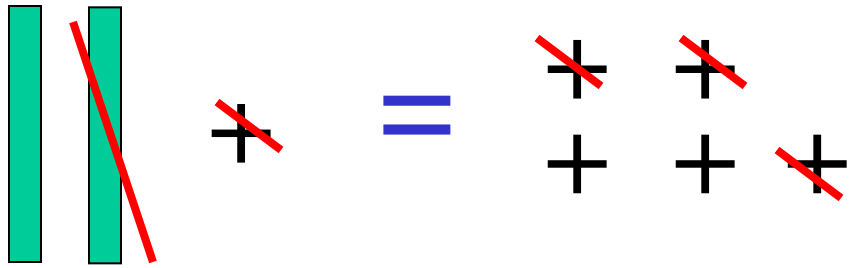
If $2x = 4$, how do I solve?

Divide both sides in half.

$x = 2$

HOMEWORK

Draw problem #3 $2x + 1 = 5$



Take away +1 from both sides

Divide both sides in half.

Algebra

$$2x + 1 = 5$$
$$-1 \quad -1$$
$$2x = 4$$
$$\frac{2x}{2} = \frac{4}{2}$$
$$x = 2$$

☑ $2(2) + 1 = 5$

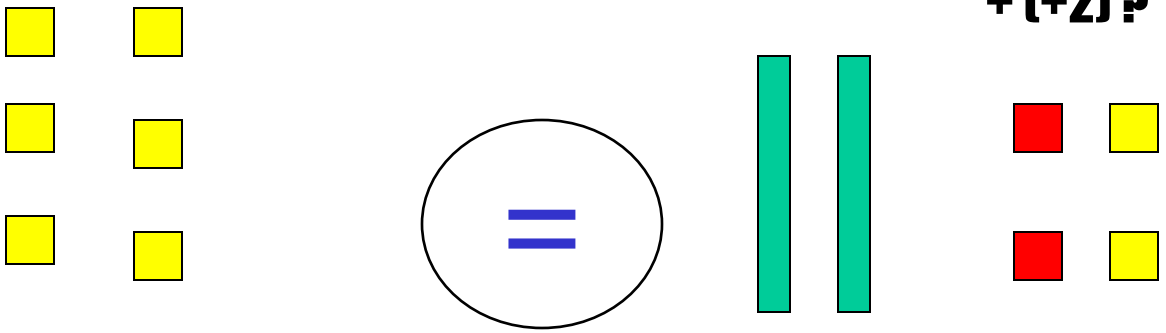
$4 + 1 = 5$

$5 = 5$

HOMEWORK

Show me problem #4 $4 = 2x - 2$

What happens to -2 + (+2) ?



What can I add to both sides?

Add +2 to both sides.

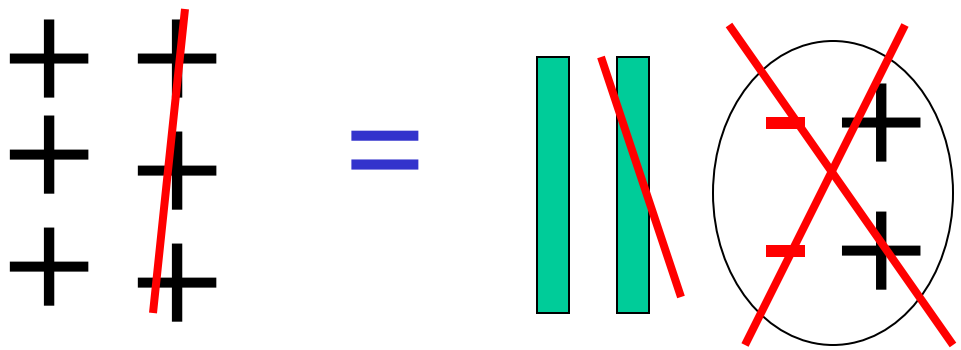
If $6 = 2x$, how do I solve?

$x = 3$

Divide both sides in half.

HOMEWORK

Draw problem #4 $4 = 2x - 2$



Add +2 to both sides.

-2 + (+2) equal zero.

Divide both sides in half.

Algebra

$$4 = 2x - 2$$
$$+2 \qquad +2$$
$$6 = 2x$$
$$\frac{6}{2} = \frac{2x}{2}$$
$$3 = x$$

$$4 = 2(3) - 2$$
$$4 = 6 - 2$$
$$4 = 4$$

Put your **algebra tiles** back in your bag and ziplock them.

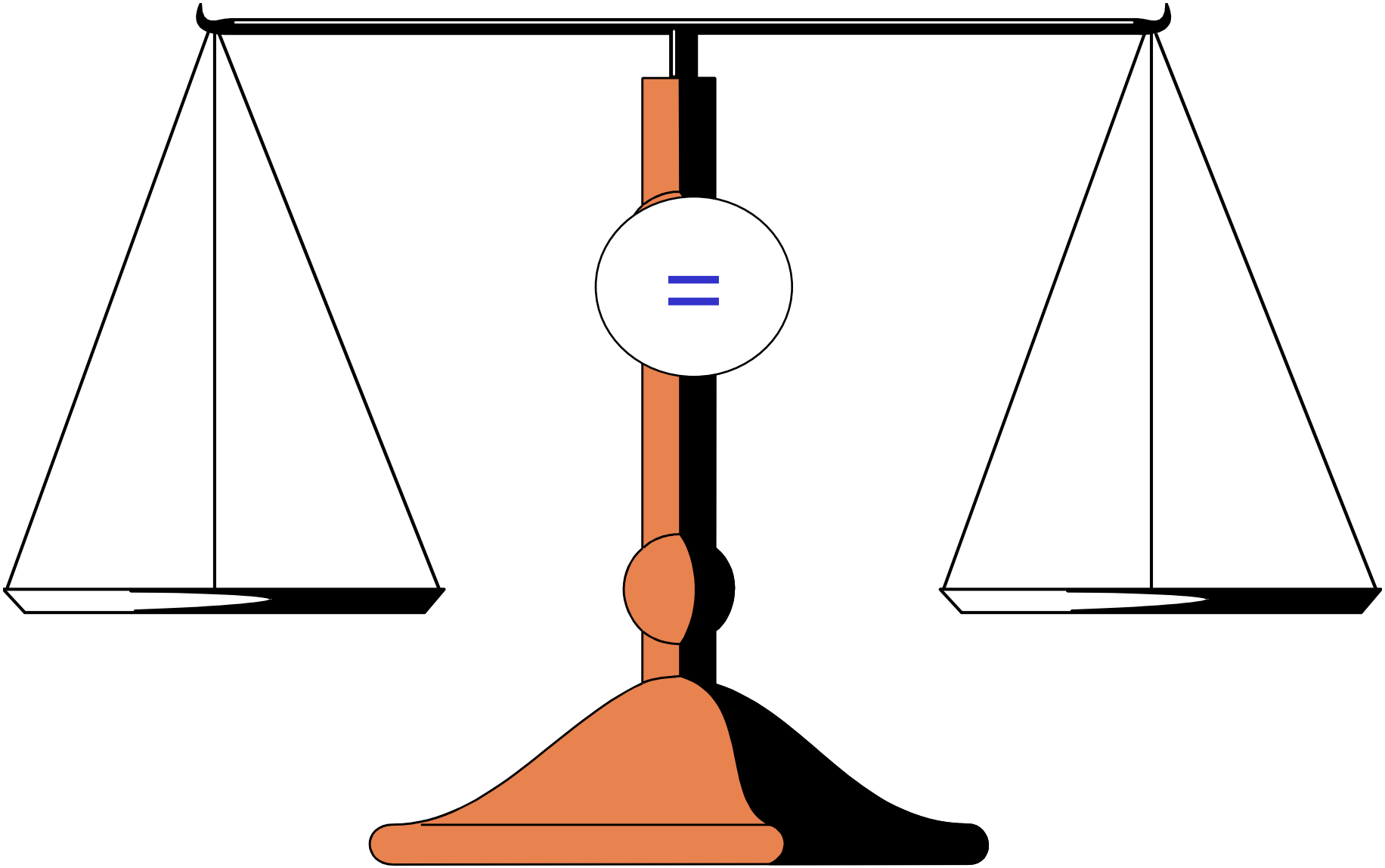
Pass your tiles forward quickly.

Pass up your **balance scale worksheet**.

That's all Folks!

Teacher Note: Use the next slide as a master. Make one copy for each student to use as a placemat when using the **algebra tiles** for solving equations as a hands on model.

EQUATIONS WITH ALGEBRA TILES



If you have trouble viewing you need MathType software:

To see all math formulas correctly you need to install MathType software, similar to equation editor and is available for free at Design Science website .

For more information on Math Slideshows visit:

http://www.mathslideshows.com/