One Step Equations

Multiplication and Division

What is an equation?

- An equation is a mathematical sentence that contains an equal sign (=)

$5n = 25$

How do you SOLVE an equation?

To solve an equation, replace the variable with a number that makes the equation true. This number is a solution.

Using Substitution to determine the solution.

Is 12 the solution to the equation $3x = 36$

$3x = 36$

$3(12) = 36$ ← Substitute x with 12

$36 \neq$ or $= 36$

The equation is _____.

12 is or is not the solution to $3x = 36$

State whether the given number is a solution to the equation. (yes or no)

1) $y \div 6 = 4$ $y = 24$ _____

2) $20 = 5p$ $p = 3$ _____

3) $45 = \frac{k}{5}$ $k = 9$ _____

4) $8j = 56$ $j = 7$ _____

Solving Equations

How do you solve an equation?

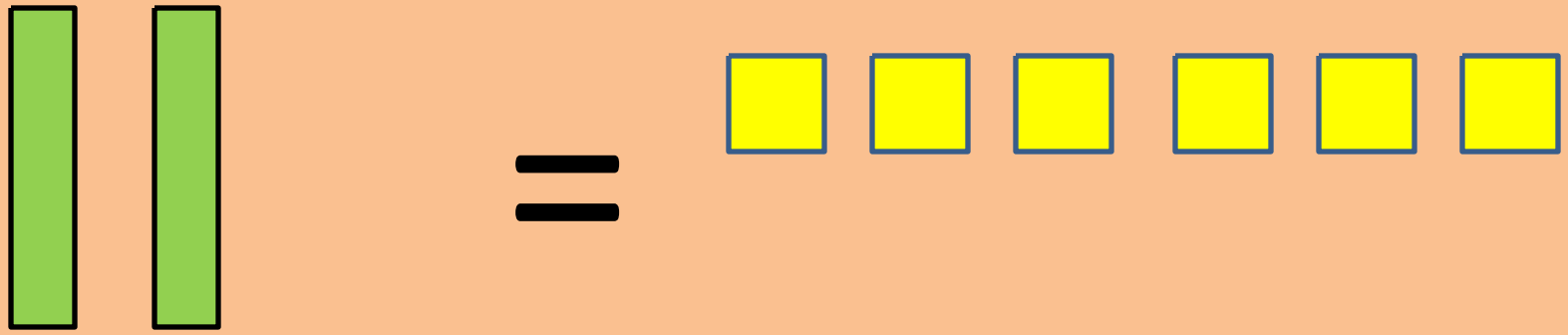
How do we determine the value of the variable?

Algebra Tiles

inverse Operation

Algebra Tiles

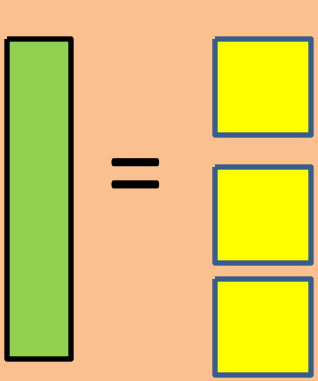
$2x = 6$

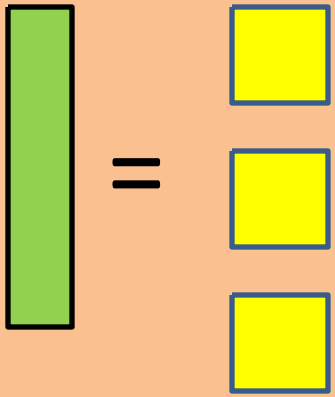


MODEL THE EQUATION

Algebra Tiles

$2x = 6$

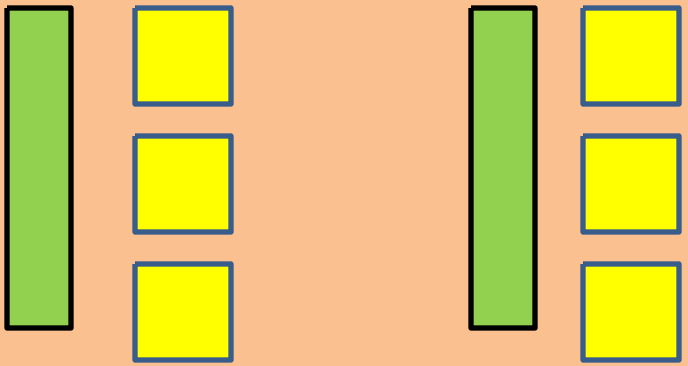




Isolate the variables: **EACH** Variable has to have the same number of tiles!

Algebra Tiles

$2x = 6$



$x = 3$

Find the Solution

Inverse Operation

What is the inverse operation of multiplication?

$$\frac{2x}{2} = \frac{6}{2}$$

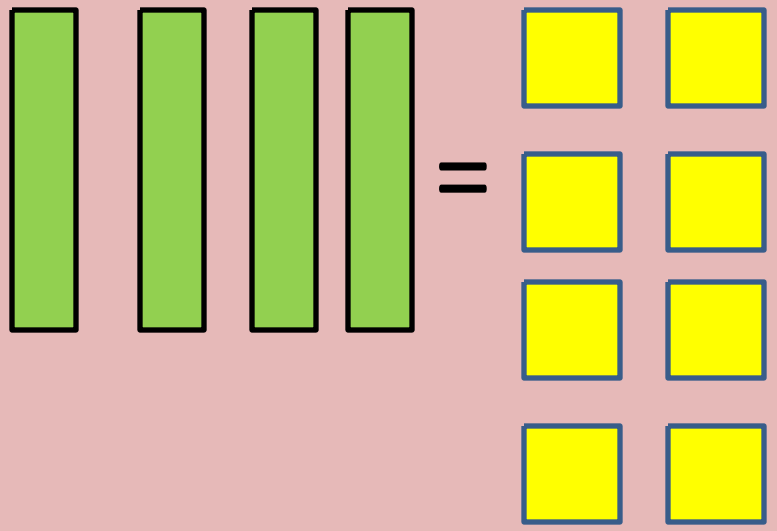
$$x = 3$$

Remember an equation is a balance. If you do something to one side you MUST do it to the other.

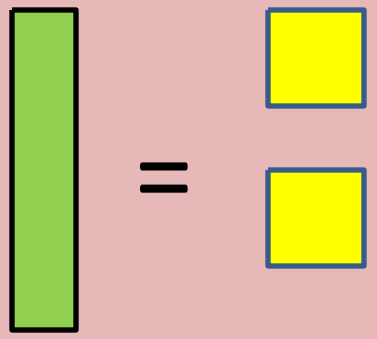
Solve the equation: 4x = 8

ALGEBRA TILES

MODEL:



SOLUTION

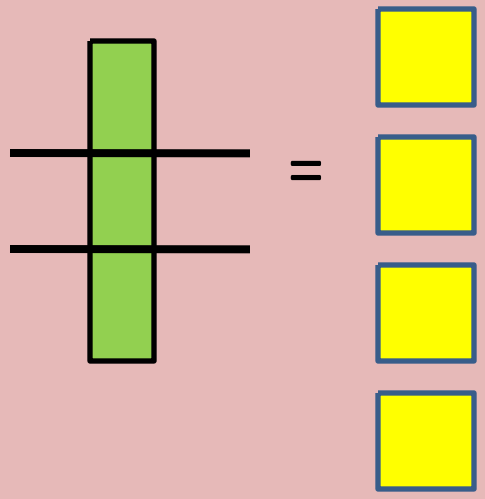


X = _____

Solve the equation: $j \div 3 = 4$

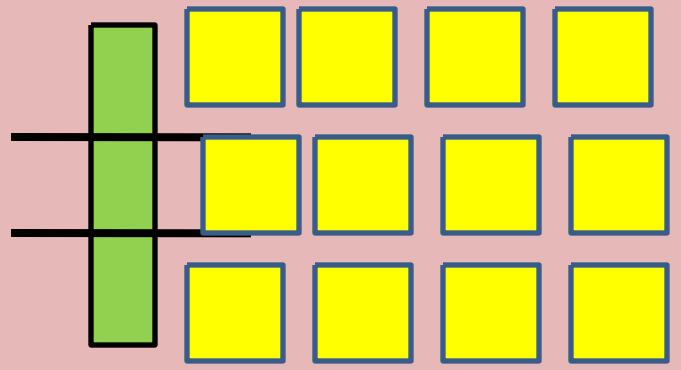
ALGEBRA TILES

MODEL:



IF you Divide you must divide the variable!

Solution:



j = _____

Solve each equation

1) w ÷ 8 = 3 *w* = _____

2) 2n = 22 *n* = _____

3) $\frac{k}{18} = 9$ *k* = _____

4) 13m = 52 *m* = _____

????????

- What about problems with larger numbers?
- What about problems with fractions?
- What about problems with decimals?

*You can use the SAME methods to solve those!

5) $j \div 4.4 = 28.2$ $j =$ _____

6) $0.6y = 1.86$ $y =$ _____

7) $\frac{2}{5}g = 1\frac{3}{5}$ $g =$ _____

8) $\frac{h}{2} = 4\frac{2}{7}$ $h =$ _____