

# DO NOW

Solve  $3x = 6$

$x = 2$

Page 1

## 2.1 Solving Linear Equations

equation	vs	expression
has an =	}	No =
Solve		Simplify

Linear equation - an equation where the variable has only exponents of 1.

conditional equation - true for some values  
Answer: "x=" form

identity - true for ALL values  
Ends in a true statement.  
For Ex:  $2 = 2$

contradiction - NEVER true  
Ends in a false statement  
For Ex:  $2 = 3$

Page 2

### Solving Linear Equations

An equation is like: a balanced scale (= ← balance point)

↳ maintain the balance

\* Anything "done" to one side must be "done" to the other

GOAL: Get variable alone

→ use inverse operations to undo what was "done" to the variable

→ undo operations in reverse order

\*\*\*Check using check charts.

### Practice:

1.  $x + 3 = 9$

$x + 3 - 3 = 9 - 3$

$x = 9 - 3$

$x = 6$

2.  $4z = 8$

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

$z = 2$

3.  $\frac{x}{5} = 5$

$x = 5(5)$

$x = 25$

4.  $y - 7 = 9$

$y = 9 + 7$

$y = 16$

check:

$y - 7$	$9$
$16 - 7$	$9$
$9$	$9 \checkmark$

Page 3

Page 4

5.  $2x + 3 = 15$

$2x = 15 - 3$

$2x = 12$

$x = \frac{12}{2}$

$x = 6$

7.  $7 - x = 9$

$-x = 9 - 7$

$-x = 2$

$x = \frac{2}{-1}$

$x = -2$

6.  $71 = 7x + 15$

$71 - 15 = 7x$

$56 = 7x$

$\frac{56}{7} = x$

$8 = x$

8.  $6t = 3$

$t = \frac{3}{6}$

$t = \frac{1}{2}$

check:

71	$7x + 15$
71	$7(8) + 15$
71	$56 + 15$
71	$71 \checkmark$

9.  $\frac{3}{5}x - 6 = -18$

$\frac{3x}{5} - 6 = -18$

$\frac{3x}{5} = -18 + 6$

$\frac{3x}{5} = -12$

$3x = -12(5)$

$3x = -60$

$x = \frac{-60}{3}$

$x = -20$

Page 5

Page 6

# **HOMEWORK**

Worksheet - HW 2.1

Solve Linear Equations