

12-6-17

Aim: SWBAT solve and check 2-step equations.

HW: Pg. 131 # 3 - 17 odd

Quiz tomorrow (1-step solve and check)

Do Now: Solve.  $6 - x = -10$

Pg. 124 #9-25 odd, 30

9)  $\frac{z}{1} \cdot \frac{p}{z} = 9 \cdot \frac{2}{1}$      $\text{cl/}$   $\frac{p}{z} = 9$   
 $p = 18$      $\frac{18}{z} = 9$   
 $9 = 9$

11)  $\frac{3b}{3} = \frac{39}{3}$      $3b = 39$   
 $b = 13$      $3 \cdot 13 = 39$   
 $39 = 39$

13)  $\frac{z}{1.8} = 5$      $\text{cl/}$   $\frac{z}{1.8} = 5$   
 $z = 9$      $\frac{9}{1.8} = 5$   
 $5 = 5$

15)  $\frac{44}{4.4} = \frac{44p}{4.4}$      $\text{cl/}$   $44 = 4.4p$   
 $10 = p$      $44 = (4.4)(10)$   
 $44 = 44$

17)  $\frac{14h}{14} = \frac{35}{14}$      $\text{cl/}$   $14h = 35$   
 $h = \frac{35}{14}$      $\frac{7 \cdot 14 \cdot 5}{1 \cdot z} = 35$   
 $h = \frac{5}{2}$      $35 = 35$

19)  $\frac{12m}{12} = \frac{-25.2}{12}$      $12m = -25.2$   
 $m = -2.1$      $12(-2.1) = -25.2$   
 $-25.2 = -25.2$

21)  $\frac{1368}{456} = \frac{456x}{456}$      $\text{cl/}$   $1368 = 456x$   
 $3 = x$      $1368 = 456 \cdot 3$   
 $1368 = 1368$

23)  $\frac{12}{-2} = \frac{-2z}{-2}$      $\text{cl/}$   $12 = -2z$   
 $-6 = z$      $12 = (-2)(-6)$   
 $12 = 12$

25)  $\frac{y}{-1.5} = 21(-1.5)$      $\text{cl/}$   $\frac{y}{-1.5} = 21$   
 $y = -31.5$      $\frac{-31.5}{-1.5} = 21$   
 $21 = 21$

30)  $\frac{-x}{-1} = \frac{-8}{-1}$      $\text{cl/}$   $-x = -8$   
 $x = 8$      $(-1)(8) = -8$   
 $-8 = -8$

## How to Play the Equations Game

### #1 Eliminating numbers on the same side as the variable

- Constants eliminate with opposite sign *(need to make 0)*
- Coefficients eliminate with division of the coefficient
- Denominators eliminate with multiplication of the denominator
- Fractional Coefficients eliminate with multiplication of the reciprocal

*need to  
make 1  
sign stays  
the same*

### #2 Variable terms eliminate with opposite sign

### #3 Two-Step Equations

- i. Eliminate the constant
- ii. Eliminate the coefficient or denominator

### #4 Entire side as a fraction

- i. Eliminate the denominator

### #5 Distributive Property and Combining Like Terms Equations

- i. Simplify before you solve
  - Eliminate parentheses
  - Combine Like Terms

### #6 Variables on Both Sides Equations

- i. Eliminate a variable term

### Checking an Equation

- i. Rewrite the original equation
- ii. Substitute the answer for the variable
- iii. Evaluate until sides match using the Order of Operations

*Step iii repeats as long as it takes.*

Solve and check.

$$* \begin{array}{r|l} 6 & -x = -10 \\ -6 & -6 \end{array}$$

$$\begin{array}{r|l} \cancel{-x} & \cancel{-16} \\ \cancel{-1} & \cancel{-1} \end{array}$$

$$x = 16$$

*check*

$$6 - x = -10$$

$$6 - 16 \stackrel{?}{=} -10$$

$$-10 = -10$$

$$2x - 3 = -15$$

$$\begin{array}{r|l} +3 & +3 \\ \hline 2x & -12 \\ \hline \cancel{2} & \cancel{2} \\ x & = -6 \end{array}$$

*check*

$$2x - 3 = -15$$

$$2(-6) - 3 \stackrel{?}{=} -15$$

$$\cancel{-12} - 3 \stackrel{?}{=} -15$$

$$\cancel{-15} = -15$$

$$\begin{array}{r|l} \frac{x}{3} & +2 = 4 \\ \hline \cancel{-2} & \cancel{-2} \end{array}$$

$$\begin{array}{r|l} \cancel{\frac{x}{3}} & \cancel{2} \\ \hline x & = 6 \end{array}$$

$$\frac{x}{3} + 2 = 4$$

$$\frac{6}{3} + 2 \stackrel{?}{=} 4$$

$$\cancel{\frac{6}{3}} + 2 \stackrel{?}{=} 4$$

$$\cancel{2} + 2 \stackrel{?}{=} 4$$

$$4 = 4$$

Solve and check.

\*  $-3 + 8x = 35$       *check*

$+3$	$+3$
<del><math>8x</math></del>	$38$
$x$	$\frac{38}{8}$
$x$	$\frac{19}{4}$

$-3 + 8x = 35$   
 $-3 + 8(\frac{19}{4}) = 35$   
 $-3 + 38 = 35$   
 $35 = 35$

$63 = 42 - 7x$

$-42$	$-42$
$21$	$-7x$
$-7$	$-7$
$-3$	$x$

$63 = 42 - 7x$   
 $63 = 42 - 7(-3)$   
 $63 = 42 - (-21)$   
 $63 = 63$

↑  
Leave the fraction

Solve and check.

$$\begin{array}{r} \frac{x}{2} - 6 = 4 \\ +6 \quad +6 \\ \hline \frac{x}{2} = 10 \\ \cdot 2 \quad \cdot 2 \\ \hline x = 20 \end{array}$$

$$\begin{array}{r} \frac{x}{2} - 6 = 4 \\ -6 = 4 \\ +6 = 4 \\ -6 = 4 \\ +6 = 4 \\ -6 = 4 \end{array}$$

$$\begin{array}{r} -1 + \frac{x}{-9} = -2 \\ +1 \quad +1 \\ \hline \frac{x}{-9} = -1 \\ \cdot (-9) \quad \cdot (-9) \\ \hline x = 9 \end{array}$$

$$-1 + \frac{x}{-9} = -2$$

$$-1 + \frac{9}{-9} = -2$$

$$-1 + (-1) = -2$$

$$-2 = -2$$