Solving One-Step Equations – Multiplication & Division (SOL 6.18 & 7.14)

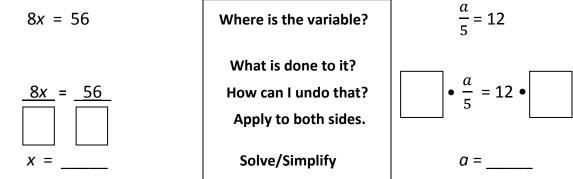
Remember: The GOAL of solving equations: _____ ٠

To do this you need to ______ the variable, using ______

State the INVERSE OPERATIONS

- Add 23
- Subtract 18 ο _____
- Multiply by –15 _____ ο
- Divide by 8 ο

Example 2: Solve $\frac{a}{5} = 12$ Example 1: Solve 8x = 56. Solution: Solution:



Check:

Check:

$$8x = 56$$
Write original equation. $\frac{a}{5} = 12$ $8(_) \stackrel{?}{=} 56$ Substitute for variable. $\frac{(_)}{5} = 12$ $_= 56\checkmark$ Is it true? $_= 12$

Let's Practice!!

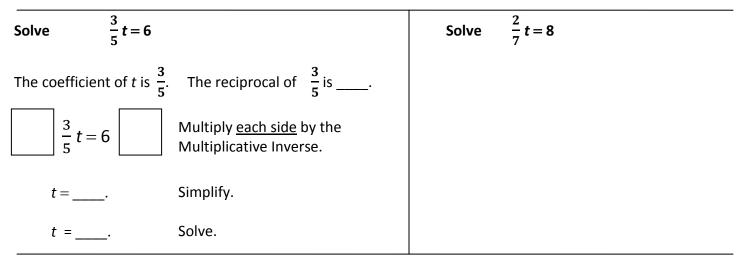
Solve each equation. Check your solution.

Solve	Check here:	Solve	Check here:
3 <i>a</i> = 18		$\frac{b}{4} = 12$	
$4 = \frac{f}{3}$		48 = 6y	
121 = 11a		$\frac{g}{7} = 7$	
9x = 45		32 = 8a	
3z=36		$\frac{x}{5} = 2$	
$21 = \frac{x}{3}$		8b = 56	

Multiplicative Inverses (Reciprocals): Used to solve multiplication/division equations that contain fractions!

	1	5	2
Find the Multiplicative Inverse, or reciprocal of:	-	-	—
	3	7	5

Now let's use multiplicative inverses to solve equations...



Let's Practice!!

Solve each equation. Check your solution.

$\frac{1}{7}t=3$	$\frac{4}{5}t=8$	
$\frac{1}{9}t = 6$	$\frac{3}{5}t = 6$	
$\frac{2}{3} = \frac{3}{10} t$	$\frac{1}{4} Q = \frac{4}{15}$	
$\frac{a}{9} = 11$	$\frac{h}{8} = 6$	

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$\frac{3}{4}x = 9$	$\frac{5}{8}$ k = 25	
$\frac{a}{6} = 8$	7s = 49	
32 = 16h	$5 = \frac{p}{5}$	
4y = 12	$\frac{x}{4} = 32$	
17 + c = 41	$\frac{2}{5} \gamma = \frac{4}{15}$	
10 + d = 24	8 = b – 5	
14g = 56	112 = 8v	
$\frac{t}{12} = 11$	$\frac{f}{11} = 12$	

Name _____

1. Solve the equations. Check your solutions.

Solve	Check here:	Solve	Check here:
15 = w + 4		a – 2 = 10	
3 <i>b</i> = 21		$\frac{1}{3}n = 13$	
y – 7 = 12		$34 = \frac{y}{2}$	
$\frac{a}{7} = 5$		$\frac{3}{7}n = 24$	
4 <i>x</i> = 24		w + 2 = 12	

Vocabulary Check:

1. Operations that "undo" each other are called	
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2. A mathematical sentence that contains an equal sign is an _____

3. The value of the variable that makes the equation true is called the ______

4. A _______ is a symbol, usually a letter, used to represent an unknown number.

Solve	Check	Solve	Check
Solve 7t = 49		Solve 15h = 75	
$\frac{\frac{3}{4}}{4} x = 9$		- <i>d</i> = -6	
- <i>c</i> = 25		5k = 25	
-12 = 2 + h		$13 = -\frac{x}{2}$	
k – 9 = –11		s – 4 = 12	