Math 6 NOTES (8.2) Name ______________________ Block ____

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

- **Remember**: The **GOAL** of solving equations: ____
  - To do this you need to ______________ the variable, using ______________________________

State the INVERSE OPERATIONS

- Add 23 ____________________________________
- Subtract 18 ____________________________________
- **Multiply by –15** ____________________________________
- **Divide by 8** ____________________________________

Example 1: **Solve 8*x* = 56.**

Solution:

$8x = 56$

$\dfrac{8x}{\square} = \dfrac{56}{\square}$

$x =$ ______

Where is the variable?

What is done to it?

How can I undo that?

Apply to both sides.

Solve/Simplify

Example 2: **Solve $\frac{a}{5} = 12$**

Solution:

$\frac{a}{5} = 12$

$\square \bullet \frac{a}{5} = 12 \bullet \square$

$a =$ ______

Check:

$8x = 56$

$8(\_\_\_) \stackrel{?}{=} 56$

____ $= 56$ ✓

Write original equation.

Substitute for variable.

Is it true?

Check:

$\frac{a}{5} = 12$

$\frac{(\quad)}{5} = 12$

_____ $= 12$

Let's Practice!!

Solve each equation. Check your solution.

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

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

Find the Multiplicative Inverse, or reciprocal of: $\frac{1}{3}$ $\frac{5}{7}$ $\frac{2}{5}$

Now let's use multiplicative inverses to solve equations…

Solve $\frac{3}{5}t = 6$ The coefficient of t is $\frac{3}{5}$. The reciprocal of $\frac{3}{5}$ is _____. $\boxed{}\ \frac{3}{5}t = 6\ \boxed{}$ Multiply <u>each side</u> by the Multiplicative Inverse. $t =$ _____. Simplify. $t =$ _____. Solve.	**Solve** $\frac{2}{7}t = 8$

Let's Practice!!

Solve each equation. Check your solution.

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

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

Math 6 - HOMEWORK (8.2) Name ____________________________

1. Solve the equations. Check your solutions.

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

Vocabulary Check:

1. Operations that "undo" each other are called ____
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
$7t = 49$		$15h = 75$	
$\frac{3}{4}x = 9$		$-d = -6$	
$-c = 25$		$5k = 25$	
$-12 = 2 + h$		$13 = -\frac{x}{2}$	
$k - 9 = -11$		$s - 4 = 12$	