**3.4 Solving One-Step Equations with Multiplication/Division**

EQ:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

To solve an equation for a **VARIABLE**: Find the **VALUE** of the **VARIABLE**!

-**ISOLATE** the **VARIABLE** on **ONE SIDE** of the equation **by itself.**

REMEMBER: An equation is like a **balanced scale**! Whatever you do to ONE side, you must do to the OTHER!

**INVERSE OPERATIONS**: **OPPOSITE OPERATIONS** that **UNDO** each other.

What is the INVERSE of MULTIPLICATION (3n) ? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the INVERSE of DIVISION ( $\frac{}{} )$? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**-HOW TO SOLVE a ONE-STEP EQUATION:**

**STEP 1-** **HIGHLIGHT** the number on the side of the equation with the variable that you will need to move to the other side. INCLUDE the sign in front of the number if there is one.

**STEP 2- WHICH OPERATION** relates the number to the variable? **WRITE** that operation symbol above the number.

**STEP 3- PERFORM** the **OPPOSITE OPERATION** to **BOTH SIDES** of the equation.

**\*\*\* IF** you end up with a **NEGATIVE VARIABLE,**

you must **MULTIPLY BOTH SIDES** by  **-1 \*\*\***

**STEP 4- CHECK** your answer to make sure it is TRUE by replacing the variable in the original problem with your answer.

**MULTIPLICATION -2N = 8 18 = -4y**

 **EXAMPLES**

**MULTIPLICATION by Fractions examples**

 **\*\*\*Instead of DIVIDING by a Fraction,**

 **MULTIPLY by the RECIPROCAL! \*\*\***

**-** $\frac{4}{5}$ **X = -8 - 4 =**$ \frac{1}{3} $**G**

**DIVISION -** $\frac{a}{5}$ **= -9 -11=** $\frac{b}{4}$

 **EXAMPLES**

**DIVISION -** $\frac{m}{2}$ **= 3.2 -** $\frac{x}{3}$ **= - 6**

 **EXAMPLES**

Complete these ON YOUR OWN problems in your MATH NOTEBOOK!

1. -2X = -24 2. $\frac{4}{5}$ y = - $\frac{3}{5}$ 3. $\frac{1}{3}$W = -10.1

4. $\frac{x}{5}$ = -2 5. - 3.5 = - $\frac{c}{2}$6. - $\frac{x}{5}$ = - 10.2

**3.4 Solving One-Step Equations with Multiplication/Division**

EQ:How do we solve equations using inverse operations?

To solve an equation for a **VARIABLE**: Find the **VALUE** of the **VARIABLE**!

-**ISOLATE** the **VARIABLE** on **ONE SIDE** of the equation **by itself.**

REMEMBER: An equation is like a **balanced scale**! Whatever you do to ONE side, you must do to the OTHER!

**INVERSE OPERATIONS**: **OPPOSITE OPERATIONS** that **UNDO** each other.

What is the INVERSE of MULTIPLICATION (3n) ? \_\_DIVISION\_\_\_\_\_

What is the INVERSE of DIVISION ( $\frac{}{} )$? \_MULTIPLICATION\_\_\_\_\_\_

**-HOW TO SOLVE a ONE-STEP EQUATION:**

**STEP 1-** **HIGHLIGHT** the number on the side of the equation with the variable that you will need to move to the other side. INCLUDE the sign in front of the number if there is one.

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**STEP 4- CHECK** your answer to make sure it is TRUE by replacing the variable in the original problem with your answer.

**MULTIPLICATION -2N = 8 18 = -4y**

 **EXAMPLES -2 -2 -4 -4**

 **N= -4 Y= - 4** $\frac{1}{2}$

**MULTIPLICATION by Fractions examples**

 **\*\*\*Instead of DIVIDING by a Fraction,**

 **MULTIPLY by the RECIPROCAL! \*\*\***

**-** $\frac{4}{5}$ **X = -8 - 4 =**$ \frac{1}{3} $**G**

 X=10 G = -12

**DIVISION -** $\frac{a}{5}$ **= -9 -11=** $\frac{b}{4}$

 **EXAMPLES**

 a = 45 b= -44

**DIVISION -** $\frac{m}{2}$ **= 3.2 -** $\frac{x}{3}$ **= - 6**

 **EXAMPLES**

 M= -6.4 x= 18

Complete these ON YOUR OWN problems in your MATH NOTEBOOK!

1. -2X = -24 2. $\frac{4}{5}$ y = - $\frac{3}{5}$ 3. $\frac{1}{3}$W = -10.1

4. $\frac{x}{5}$ = -2 5. - 3.5 = - $\frac{c}{2}$6. - $\frac{x}{5}$ = - 10.2