Solving Equations: Notes

One Step Equations:

To find the answer to an equation, isolate the Garaviable is isolated when it is variable by itself on one side of the equation

operation, which will undo operations on the varial

Multiplication & Division

An equation is like a balance scale
is to keep it balanced, perform the same
operation to both sides

Addition & Subtraction:

which says we can add or subtract to both sides of an equation equally and the equation is equal

Multiplication & Division:

which says we can multiply or divide to both sides of an equation equally and the equation is

equal

Two Step Equations:

Steps to solve equations: Inverses

- Inverse of Addition & Subtraction (First)
- · Inverse of multiplication & Division (Later)

• Two step Equations w/ Fractions:

· Equations w/ numerators: * mutiply both sides

$$\frac{x-7}{3} = -12$$

$$(3)$$

$$x-7 = -12(3)$$

$$x-7 = -36$$

$$+7 + 7$$

$$x = -29$$

Multi Step Equations:

Steps to solving Equations:

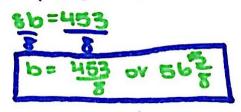
- · Distribute to get rid of paventheses
- · combine like terms
- Inverse of Addition & Subtraction
- · Inverse of Muttiplication & Division

*If you have a set of grouping symbols, you need to distribute whatever term is immediately in front of them to get not of them. (Remember to keep the

the same side of the Equal Sign. You should combine those like terms to simplify the equation.

$$5m-23+2m=5$$
 $n+5(n-1)=7$
 $7m-23=8$ $n+5n-5=7$
 $429+23$ $6n-5=7$
 $45+5$
 $45+5$
 $6n=12$
 $6n=12$

in an equation, multiply by the LCD.



Equations with variables

Sleps to solve Equations:

- * Distribute to get ind of paventheses
- ocombine like terms
- Get variables to one sldle # add or subtract the side
- · Inverse of Addition & Subtraction
- · Inverse of Multiplication & Division

*Simplifying both sides:

* Equations with infinite or No solutions

Literal Equations:

Literal Equations: an equation with 2 or more variables

You can rearrange literal equations using the rules for equations to isolate any of the variable. This is called solving for a variable.

Ratius, Rates, and Conversions:

Ratio: compares 2 numbers by using division 17 the ratio of a and b can be written as पद पवः b प्रवक्त

Unit Rates: we use rates to compare similar situations

> to And a unit rate we need to get our second unit equal to one

If John can eat 53.5 hot dogs in 12 minutes, how many can he eat in I minute?

53.5 = 4.46 not dogs this to compare Hens as well.

converting units: To convert from one unit of measure to another, we use a conversion factor, this is a ratto with equal units so that it is equal to I that we multiply the original unit by to change it

conver 330 minutes to hours

330 min . 1 hr = 330 hr = 5.5 hrs

converting Rates: same as I

A student ran the 50 yel dash in 5:8 sec. At what speed all the number run in miles per hour?

5.8 Sec 1760 yd 1 min 1hr 180000 mi 2

Solving Proportions:

Proportion: An equation that states 2 ratios are equal

*We can solve a proportion by using the cross multiplying method.

17 You take the numerator of one ratto and multiply it by the denominator of the other. Those 2 products should be equal.

you can also use proportions to solve problems.

An 8 oz. can of ovange juice contains 97 mg of vitamin C. About how many mg of vitamin C would be in a 12 oz. can?

X=145.5

You can also use this for percent) percentage!

find 50% of 20

must percent of 60 is 15? $P \cdot 60 = 13$ $P = \frac{1}{100} = \frac{1}{10} = 25\%$