



Linear Equations

A <u>Linear Equation</u> is an equation with a variable that shows two expressions are equal. The goal is to isolate the variable of the equation and to find the value of the variable. **How to Solve:**

To solve a linear equation you must isolate the variable. This sounds easy and is. Here is an example:

2x+2=4	This is the problem.
2x+2=4 -2=-2	First you must try to isolate the variable.
$2\mathbf{x} = 2$	You now have to solve for x
2x/2 = 2/2	You divide for the variable
x=1	That is the answer

Now that get the basic idea here is a problem that is a little more complicated:

$$\underline{x}-4=\underline{x}$$

3 5

The answer is x=30 A few more example are: -5x=10-15 and 10x+50=140

The answers are x=1 and x=9

Literal Equations

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Literal equations are equations that apply real life efficiencies to symbols in a problem. You cannot truly solve a literal equation without truly knowing what the letters represent. In other words you are simplifying an equation for a given letter in the equation. This is because a literal equation is very many equations put into one. By adding or moving variables you can have very many equations from one. An example of this would be f+c-d=d+p. In this problem there are five different equations.

Example (well known):

E=mc ² for m(mass)	You must plan an attack for the leaving m alone.
E=mc ²	You must isolate m so to get rid of c^2 you must divide by c^2 on both sides to get rid of it.
$E/c^2 = m$	By eliminating all other variables you have left m alone and have solved the equation.

In this example there are 3 equations in one. Some more examples would be:

e=f/a for a

 $A = v_f - v_i / t$ for v_f

Answers would be: Ea=f At+v_i=v_f



Equation for A line

The equation of a line is fairly simple and can be done in three different ways. Using different forms a line can be constructed on a graph. There are three different forms you can write a line in.

Point-Slope Form

The point slope is the form that uses like its title indicates a point in the line and the slope of the line to give the equation. The point- slope form is the best way to start the equation of any line because you can use it to get to the other two equations. Point -slope is written as so $y - y_1 = (slope) m (x-x_1)$. Suppose you were look at a line on a graph or you were give a point on a line and is slope to solve it you would put it in the equation.

 $\mathbf{y} - \mathbf{y}_1 = \mathbf{m}(\mathbf{x} - \mathbf{x}_1)$

Untitled

Example:

You are given a point (-2, -2) and the slope is 5. You must give the equation	This is the problem.
y- (-2)=5(x- (-2)	You plug the information into the equation.
y+2=5x+10	You must use the distributive property. That is the answer.

Another example:

Slope: 5 Point:(10,10) Form is: y-10=5(x-10)



Slope Intercept Form

The slope intercept form is the most well known equation of a line. It uses the slope of the line and the y-intercept. It can be written as y=mx+b. This equation is the easiest to use and can be reached by using the point-slope form.

y=mx+b

Example:

The slope is 5 and the y-intercept is (0,3)	This is the information
y=5x+3	You plug it in.

Another Example from Point-slope form

Given is slope 5 and point (-2, -4)	This is information given.
y- (-4)=5(x- (-2))	You plug it in.
y+4=5x-10	Use the distributive property.
y=5x-14	Take away 4 from each side and you have slope intercept form.





Standard Form

This form is the most difficult to grasp but is the prettiest to look at. It is written as ax +by=c. IT must remain in this format. To get is you must use point-intercept form to start it. To use standard form to draw a line you get the x and y intercepts isolated and connect the points.

ax +by=c

Example:

The slope is 6 and the point is (0,5) This is the problem's info.		
y=6x+5	Because of the info it can go straight into slope intercept form	
-6x+1y=5	You move the x to the other side by subtracting it and placing it in the correct form.	
6x-1y= -5	Because x cannot be negative you must divide everything by -1.	

This is all I have to say about Algebra. If I did not help you at all check out these other sites for more assistance.

A Great Helpful Math Site Here

My school's site

If you want to see my fellow classmates sites click here





