Determine slope, x-intercept, and y-intercept of a linear equation :

A linear equation describes a straight line on a coordinate plane. Sometimes it is easier to graph the line if we know a few critical points. In this math prompt, we will determine parts of linear equations in two-variables namely, the slope, the x-intercept and the y-intercept.

Slope (m)

In mathematics, the slant or steepness of a line is formally known as its slope. We measure the slope of a line by the ratio of vertical change (rise) to the corresponding horizontal change (run) as we move along the line, left-to-right. To find the slope, put the equation in slope-intercept form (solve for y). The number in front of the x-term is the slope.

x-intercept

The x-intercept of a line is the point where the line crosses the x-axis. In point form the 0 is second, namely $(x,0)$ where x is the x-intercept. To find the x-intercept in an equation, you let $y = 0$ and solve for x.

y-intercept

The y-intercept of a line is the point where the line crosses the y-axis. In point form the 0 is first, namely $(0,y)$ where y is the y-intercept. To find the y-intercept in an equation, you let $x = 0$ and solve for y. A second way of finding the y-intercept is to put the equation in slope-intercept form $(y = mx + b)$ and the point b is the y-intercept.

Solve formulas for specified variable :

Formulas

Formulas are equations that state a rule to show how real-world quantities are related. Most of these quantities are represented by variables. Formulas can be used to find interest, area, distance traveled at a certain speed, and many other quantities. Sometimes you may want to solve a formula for a given variable before you substitute the values.

If there is more than one variable you can solve for formula for more than one answer. Take, for example, area of a rectangle which is $A = lw$. Right now the

formula is solved for A. On the left side we are going to solve it for l and on the right side we are going to solve it for w.

$A = lw$ (divide both sides by w)

$$\frac{A}{w} = \frac{lw}{w}$$

$$\frac{A}{w} = l$$

$A = lw$ (divide both sides for l)

$$\frac{A}{l} = \frac{lw}{l}$$

$$\frac{A}{l} = w$$