WEB OF SYNERGY:

International Interdisciplinary Research Journal

Volume 2, Issue 5 Year 2023 ISSN: 2835-3013

https://univerpubl.com/index.php/synergy

Application of Equations of a Straight Line in a Plane to Solving Economic Problems

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Article Information

Received: March 25, 2023

Accepted: April 27, 2023

Published: May 06, 2023

Keywords

Plain, straight line, economical costs, budget, market, point

ABSTRACT

In the article right line of Eqs economic tables in solving use and him application reach ways showing passed.

As we know, given the points A(a,b) and B(c,d) in the plane, the set of points C(x,y) equidistant from these points would be as follows: Since AC=BC, the plane has two based on the formula for finding the distance between points $AC = \sqrt{(x-a)^2 + (y-b)^2}$, $BC = \sqrt{(x-c)^2 + (y-d)^2}$ equating these by condition

AC=BC: $\sqrt{(x-a)^2 + (y-b)^2} = \sqrt{(x-c)^2 + (y-d)^2}$. We square both sides of this expression

$(x-a)^2 + (y-b)^2 = (x-c)^2 + (y-d)^2$. Simplifying the resulting expression

$2(c-a)x + 2(d-b)y + a^2 + b^2 - c^2 - d^2 = 0$ (1) we generate and

$2(c-a) = A$, $2(d-b) = B$ and $a^2 + b^2 - c^2 - d^2 = -C$ if we denote by

$Ax + By = C$ (2)

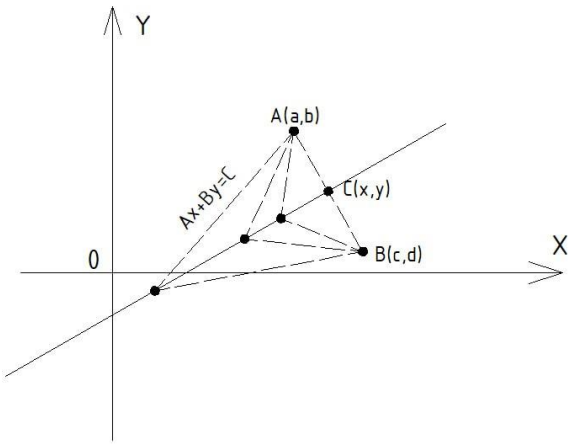

Figure 1

Let's create the general equation of a straight line in a plane . Let's consider the application of this equation to solve social and economic problems:

1) If we consider the constant C as the monthly budget of the family in order to make the equation (2) economically meaningful, the left side can be seen $Ax-$as the expenditure on food and $By-$the expenditure on clothing.

2) We can also apply the general equation (2) of the straight line to the production. For example $C-$, if we say the total cost of production of goods, $x$and on the left side $y$can be taken as the production of two types of goods, $A$and lar as the costs spent on these two types of manufactured goods.B

In addition, the general equation of the straight line (2) can be used in the market economy. If $C-$, in the amount of total income, $x$and y, can be considered as the quantities of two different products, $A$and , and can be taken as their prices. BWe give an example of a family budget below. It will be possible to solve similar problems with the help of commodity production and market economy.

3) If $Ax+By=C$the general equation of the straight line (1) $M$is defined by and the points of intersection with the coordinate axes.N

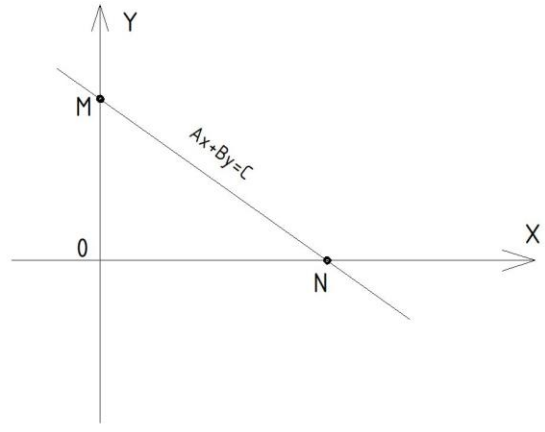

Figure 2

$M$and the line Nconnecting the points $MN$is called the family budget line. if $ON$the intercept is the food line and $OM$the intercept is the clothing line, the family's means must be below the budget line, the price of this line does not allow it to buy something expensive. If we allocate more money for food, less money is left for clothing, and vice versa, if we allocate more money for clothing, less money is left for food. Many other issues can be resolved. Let's look at

practical issues. We present the following family budget problem and find its solution.

If the monthly budget of a family is 20,000, the price of one unit of clothes should be (y)16,000 soums, and the price of food $x$should be 800 soums. Then equation (2) can be written in this form.$16000y + 800x = 20000$

If $x$there is 5 kg of flour, $y$then there is a suit. Then 16000 y+800·5=20000 => 16000 y=20000-4000 16000 y=16000 , y=1

So, from this we conclude that the family budget can buy one suit with 5 kg of flour this month.

If family income increases, the budget line moves up parallel to the previous line, and when family income decreases, the budget line moves down parallel to the previous line.

If food becomes cheaper, the budget line shifts to the left, which means that the opportunity to buy clothes increases.

If the price per head of clothing falls, the budget line shifts to the right, which means that the opportunity to buy food increases.

In conclusion, we have shown that it is possible to apply the equations of straight lines in different forms in analytical geometry to economic issues in our social life. we saw We also considered the application of the concepts of increasing and decreasing functions in solving these problems.

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