# THE ECONOMIC LINE OF THE NETWORK TO SOLVE THE PROBLEM BY A SYSTEM EQUATION

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**Annotation:** the article provides general information about the network line of the system equation, and examines the application of the system of the economic problem to the equation based on the conditions of practical line network problem. Currently the application of the system of equation associated with the problem are formulated in the economic line network, and the network system for solving the problem using the osce practical metho equation of the line shown.

**Key words:** equation of the line network System, the solution of the system of equation unique solution compatible, system inexact equivalent system, incompatible system, system matrix, augmented matrix, homogeneous system, matrix metho mathematical model.

## Be the set of economic issues.

In many cases the practical issues of systems of linear equations to solving the methodology to be applied as follows, where the qo'lab will come.

1) Analysis of all the conditions of the tables and understanding its meaning;

2) The Process under consideration offing to construct a system of equations;

3) Finding a solution to this system;

4) Determination of auxiliary parameters as needed using additional issue conditions;

5) A general law is introduced for the process being considered;

6) Analyze the answer and check the issues.    Depending on the nature of the matter, the above point's can reapplied while some can also not reapplied. Solving practical problems using a system of linear equations requires more inventive ability and a deep too-Shun of the processes being studied. The matter equations of the system when the structure of soda-increase emergency can.

When building a mathematical model of a problem, the main parameters must breached. Linear equations of the system at the conclusion of the scheme

1) The issue of the analysis to Beas a result wanted mixed whom finds doing so determine.

2) The Wanted mixed with specific issues of the availability of research to.

3) Whose mixed and given the number between dependent interaction search.

4) Linear equations system solving.

Sin modeling istemalarni matrices algebra an important role concept has. Planning problem of the gross domestic product, total labor costs, and other issues in the application of computer algebra to identify and price are matrisa will lead to the look of them. Production planning, material moves available in the expression of the link between production and in others, tartiblangan information into the system should be based to a certain extent. This tartiblangan of information systems in view of certain statements will be represented. Example the relation between the mutual information of the system in place, let's look at the material production sectors. 5 production (e.g., engineering, electricity, metal, coal, rubber production industry), which consists of a network of. Thus, the mutual relation between them 1-table expression with noticed.

1-table.

| Ag-s | 1 | 2 | 3 | 4 | 5 |
|------|---|---|---|---|---|
| 1 | $a_{11}$ | $a_{12}$ | $a_{13}$ | $a_{14}$ | $a_{15}$ |

| 2 | $a_{21}$ | $a_{22}$ | $a_{23}$ | $a_{24}$ | $a_{25}$ |
|---|---|---|---|---|---|
| 3 | $a_{31}$ | $a_{32}$ | $a_{33}$ | $a_{34}$ | $a_{35}$ |
| 4 | $a_{41}$ | $a_{42}$ | $a_{43}$ | $a_{44}$ | $a_{45}$ |
| 5 | $a_{51}$ | $a_{52}$ | $a_{53}$ | $a_{54}$ | $a_{55}$ |

This table in $a_{ij}$ $(i, j = 1,2,3,4,5)$ the world, with, $i$-network $j$- network supplies which (providing) the product of the amount specified, thus, $a_{21}$, $a_{22}$, ..., $a_{25}$ s 2-network suitable on the basis of all network; $a_{31}$, $a_{32}$, ..., $a_{35}$ there , while 3-network suitable on the basis of all network supply which products the amount of means. $a_{22}$, $a_{33}$ s is the corresponding basis of 2.3-the network of their needs, spending represents.

Y is it that carry similar work out criteria (norms) of information into the system the number of an example let us look at. Directory 3 types of raw materials used and 4 on the same product work that out is, thus raw material consumption norms of the system of 2-a table with given are.

2-table.

| Raw materials and | Products | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 1 | 2 | 3 | 2 | 0 |
| 2 | 4 | 0 | 3 | 5 |
| 3 | 3 | 5 | 2 | 4 |

2-in the table, for example, 1-type raw material consumption norms, suitable because of 1, 2, 3, and 4-the same products work out to 2,3,2,0 is.

Tables 1 and 2 in mathematics o'rganiladigan matrisa takes the example of the concept. Matrisa country in the world are widely used in economic research, in

particular, to facilitate their use by production planning, reduces labor costs and the different options of the plan forming of collapse. It also facilitates the interaction between different economic indicators related to check [1-18].

In many areas of science and technique as the mathematical models of many issues of the economy is characterized by a system of linear equations.

### Systems of linear equations using solve economic issues.

We look at an example from economics to build a system of linear equations.

**1-issue.** Three types of the raw materials used in the product produces three different directory. Production characteristics of the following are given in the table.

| Raw materials Hillary | Product types on raw materials consumption of | | | raw materials reserves |
|---|---|---|---|---|
| | 1 | 2 | 3 | |
| 1 | 5 | 12 | 7 | 2000 |
| 2 | 10 | 6 | 8 | 1660 |
| 3 | 9 | 11 | 4 | 2070 |

Given the raw materials, stocks used, product types to toe 'citizens work in the production of the size of determine.

**Charging:** Work out of should toe 'present the products size, suitable because of $x_1, x_2, x_3$ the world with the understanding of the character. 1-type the product, 1-same raw materials, one for spending 5-unit toe 'present ministry for 5 $x_1$ 1-type products work out to was going 1-for different raw materials consumption means. Just so 2,3-type products work out to was going 1-for different raw materials spent on suitable on the basis of $12x_2, 7x_3$ , is, her, for, the following equation is called is: $5x_1 + 12x_2 + 7x_3 = 2000$. Y it carry to that similar of 2.3-different raw materials for

$$10x_1 + 6x_2 + 8x_3 = 1660,$$

$$9x_1 + 11x_2 + 4x_3 = 2070$$

Equations yield will. Therefore, the issues in terms of the following three unknown three linear equations in a system yield will:

$$\begin{cases} 5x_1 + 12x_2 + 7x_3 = 2000, \\ 10x_1 + 6x_2 + 8x_3 = 1660, \\ 9x_1 + 11x_2 + 4x_3 = 2070 \end{cases}$$

This issue of the mathematical model of three unknown three linear equations from a system is to elder. This issue of equations systems of solutions finding with is charged [19-35].

**2- Issue.** A shoe factory in the raw materials used three of three different types: etik, and produces krossovka botinka. Production characteristics of the following are given in the table.

| Raw materials Hillary | Product types on raw materials consumption of | | | raw materials stocks |
|---|---|---|---|---|
| | Ethics | Crossbow | Boots | |
| $S_1$ | 5 | 3 | 4 | 1000 |
| $S_2$ | 2 | 1 | 1 | 330 |
| $S_3$ | 3 | 2 | 2 | 590 |

Given the raw materials, stocks used, product types to toe 'citizens work in the production of the size of determine?

**Of charging.** The factory every day working out you should toe 'present the products size, suitable on the basis of $x_1, x_2, x_3$ the world with the understanding of the character. To the product on the boot, 1-same raw materials, one for spending 5 unit without for $5x_1$ boots work out to be going one-for different raw materials consumption means. Just so crossbow and boots products work out to was going 1-for different raw materials spent on suitable on the basis of $3x_2, 4x_3$ is, for her , for the following equation , called is:

$5x_1 + 3x_2 + 4x_3 = 1000$. Y it carry to that similar of 2.3-different raw materials for

$$2x_1 + x_2 + x_3 = 330 \;,$$

$$3x_1 + 2x_2 + 2x_3 = 590$$

the equation form we make, as a result, the following equations of the system yield is

$$\begin{cases} 5x_1 + 3x_2 + 4x_3 = 1000, \\ 2x_1 + x_2 + x_3 = 330 \\ 3x_1 + 2x_2 + 2x_3 = 590 \end{cases}$$

This system above listed methods, one with loose, following the result we get.

Anse: Theo Faktor euer das, $x_1 = 70$ pair wich ethics, $x_2 = 110$ pair crossbow and $x_3 = 80$ pair boots work out.

**3-issue.** The firm two from is if, of them the past year joint benefits 12 million of money, a unit formed is. The current year profit of 1 to 70% to, the latter, while 40% have to increase scheduled. As a result, the annual benefits of 1,5 times to be increased should.

Each one of the benefits identify

a) over the past year;

b) Current years?

**Of charging.** $x$ and the $y$ through – first and second of the department over the past year for the benefit of the character and appreciate. It at the time, the issues, and the condition of the following system leads:

$$\begin{cases} x + y = 12 \\ 1{,}7x + 1{,}4y = 1{,}5 \cdot 12 \end{cases}$$

The system is on the loose, $x = 4, y = 8$ we get the result. So, the answer is:

a) Over the past year, 1 to 4 million of the money unit, the latter 8 million a money unit of the benefits of have.

b) The current year, while $11{,}7 \cdot 4 = 6{,}8$ million of the money unit, the latter $1{,}4 \cdot 8 = 11{,}2$ millions of money unit of the benefits of have.

**4-issue.** The firm by 236 thousand money unit of the office equip to 29 units of equipment to purchase to be allocated: a multiple computer pieces 20 thousand money in the unity of, a few table pieces 8,5 thousand of money unit price and pieces 1,5 thousand money unit in the price of a couple in a chair. Later, determine if other places with the money of a few computer of pieces 19,5 thousand money in the unity of, a few table pieces 8 thousand of money unit price and the pieces of up to 1.5 thousand money unit in the price of a couple in a chair to buy get can you, unless, for the same reason, 1 table more buy twisted to be will determine. Everyone from the equipment a few from buy to get determine [1-35].

**Of charging.** This issue terms according to the system as follows, will be:

$$\begin{cases} x_1 + x_2 + x_3 = 29 \\ 20000x_1 + 8500x_2 + 1500x_3 = 236000 \\ 19500x_1 + 8000(x_2 + 1) + 1500x_3 = 236000 \end{cases}$$

The system is loose, $x_1 = 7, x_2 = 9, x_3 = 13$ the result we get. Issue the answer is, from the computer 7 pieces, table 10 pieces, chairs, while 13 pieces to buy, made.

**5-issue.** Sewing factory 3 days during the suitor plebe and jackets work out.

Production characteristics of the following are given in the table:

| Of the day on | Product type, the size of | | | the price (thousands of money in the unit) |
|---|---|---|---|---|
| | Suits | review plebe | Jackets | |
| 1 | 50 | 10 | 30 | 176 |
| 2 | 35 | 25 | 20 | 168 |
| 3 | 40 | 20 | 30 | 184 |

Each a product price cannot find it.

**Of charging.** This issue of terms according to the following equations of systems of the form is, it is $x, y, z$ through fit in 1 pieces suitor plebe and jackets price is determined:

$$\begin{cases} 50x + 10y + 30z = 176 \\ 35x + 25y + 20z = 168 \\ 40x + 20y + 30z = 184 \end{cases}$$

Loose and we get the following result system:

**Answer.** 1.8 thousand to suit; to plab thousand 2,6; 2 jackets was estimated in units of thousands of money.

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