possible. The second is to search for those responsible for the fact that part of the company's products did not meet the standards established for it. Defect analysis helps to monitor the efficiency of employees.

When evaluating a product, such requirements for the quality of confectionery products as hygiene standards and consumer properties are taken into account. Consumer properties for each type of product are different and are determined by its technical regulations or GOST. The following types of GOSTs are used at confectionery enterprises:

GOST 5904 Confectionery. Acceptance rules, methods of sampling and sample preparation. To control the condition of the package and the quality of its labeling, a one-stage weakened sampling plan is used in accordance with GOST ISO 2859-1.

Hygiene requirements include safety and nutritional values. The safety of confectionery products is ensured in accordance with legislative requirements in the field of food safety and production processes, transportation, storage.

State regulation of the production of confectionery products is carried out by the following documents:

– TR CU 021/2011 "On food safety",

– TR CU 022/2011 "Food products in terms of their labeling,

– TR CU 029/2012 "Requirements for the safety of food additives, flavorings and technological aids" [2].

Conclusion. When creating an enterprise engaged in the production of confectionery, or any other food product, one should take into account the many requirements that apply to this industry. There are always higher demands on the quality of the food products produced than on most other industries. However, if these requirements are met and the quality of the product is improved, it is possible to capture a large market share.

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USING A DERIVATIVE TO SOLVE REAL ECONOMIC PROBLEMS

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Resume– The article discusses the differential method of economic analysis, which makes it possible to obtain reasonable results of the study of the influence of economic indicators on each other.

Резюме – В статье рассматривается дифференциальный метод экономического анализа, позволяющий получить обоснованные результаты исследования влияния экономических показателей друг на друга.

Introduction. Finding the extremum of a function of several variables does not cause any difficulties even with basic knowledge of the derivative. However, there are a number of problems in which the desired extremum of the function must obey a certain condition. This kind of extremum is called "the conditional extremum of a function". The most rational way to solve such problems is the "Lagrange multiplier" method [1].

Consider a specific example of using Lagrange multipliers which is based on a real economic problem.

The main part. There is a company selling building materials (timber) in three price categories: low(x_1), average(x_2), high(x_3). The firm purchases goods every month from a supplier. But the supplier has a condition on the purchase of a minimum quantity of products in the amount of 130 c.u. Total-cost function this firm is given by

$$u = 4x^2 + 6y^2 + 8z^2.$$

Calculate the quantity of each type of product with a minimum purchase [2].

Solution:

1. We minimize $u = f(x_1, x_2, x_3)$, given the constraint $x_1 + x_2 + x_3 = 130$. We have:

$$L = f(x_1, x_2, x_3) = 4x_1^2 + 6x_2^2 + 8x_3^2 + \lambda(x_1 + x_2 + x_3 - 130).$$

2. Find the partial derivatives of the first order

$$L'_{x1} = (4x_1^2 + 6x_2^2 + 8x_3^2 + \lambda(x_1 + x_2 + x_3 - 130))''_{x1} = 8x_1 + \lambda,$$
$$L'_{x2} = (4x_1^2 + 6x_2^2 + 8x_3^2 + \lambda(x_1 + x_2 + x_3 - 130))''_{x1} = 12x_2 + \lambda,$$
$$L'_{x3} = (4x_1^2 + 6x_2^2 + 8x_3^2 + \lambda(x_1 + x_2 + x_3 - 130))''_{x1} = 16x_3 + \lambda.$$

3. We equate the partial derivatives to zero and add the constraint equation to the system

$$\begin{cases} L'_{x1} = 8x_1 + \lambda = 0, \\ L'_{x2} = 12x_2 + \lambda = 0, \\ L'_{x3} = 16x_3 + \lambda = 0, \\ x_1 + x_2 + x_3 - 130 = 0. \end{cases}$$

From the first three equations, we express: $x_1 = \frac{\lambda}{8}$, $x_2 = \frac{\lambda}{12}$, $x_3 = \frac{\lambda}{16}$ - substitute in the equation of connection:

$$\frac{-6\lambda-4\lambda-3\lambda}{48} = 130, \quad \frac{-13\lambda}{48} = 130, \lambda = -480.$$

4. Substitute in expressions for x_1, x_2, x_3:

$$x_1 = 60 \text{ c.u.} x_2 = 40 \text{ c.u.} x_3 = 30 \text{ c.u.}$$

Thus, with the minimum possible purchase of raw materials, the company can order 60 c.u. - low, 40 c.u - average and 30 c.u. - high – type of materials for the price.

Conclusion. This task is an example of the application of "conditional extremum" in real life. To solve such a problem, only knowledge of the derivative of a function of several variables and the method of Lagrange multipliers are required. However, thanks to it, it is possible to obtain information that is applicable in solving some economic problems.

Thus, the derivative of a function has real application in many areas of activity, including in economics, helping to rationally solve various kinds of economic problems.

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ПОВЫШЕНИЕ КОНКУРЕНТОСПОСОБНОСТИ ПРОИЗВОДИТЕЛЯ КОСМЕТИКИ НА ПРИМЕРЕ СП «БЕЛИТА» ООО

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Резюме – в данной работе рассмотрен вопрос эффективного повышения конкурентоспособности продукции на рынке косметики Беларуси на примере СП “БЕЛИТА” ООО. Сделаны выводы на основе отзывов целевой аудитории товара, проведён анализ конкурентов предприятия.

Resume – this article explains various issues of efficient competitiveness in the environment of the cosmetics market in the Republic of Belarus on the example of JV “BELITA” Ltd. Based on the reviews of the product’s target audience, we conducted the analysis of the company’s competitors and made conclusions.