GALAXY INTERNATIONAL INTERDISCIPLINARY RESEARCH JOURNAL (GIIRJ)
ISSN (E): 2347-6915
Vol. 10, Issue 12, Dec. (2022)

WHO WAS THE KING IN MATHEMATICS? STORIES ABOUT GAUSS

Muydinjonov Davlatjon Rafiqjon Ugli
Kokand State Pedagogical Institute

Muydinjonov Ziyodjon Rafiqjon Ugli
Kokand State Pedagogical Institute

Madrakhimov Shukhratjon Shukurovich
Kokand State Pedagogical Institute

Madrakhimova Makhfuza Akhmedovna
Kokand State Pedagogical Institute

ANNOTATION

This article provides information about the mathematician Carl Friedrich Gauss and his work.

Keywords: mathematical ability, calculation, numbers, additions

Carl Friedrich Gauss is one of the great mathematicians. He was born on April 30, 1777 in the small German town of Braunschweig. Karl's grandmother was a farmer, and his father worked as a plumber in the city. Young Karl's mental development is positively influenced by his uncle Friedrich, who encourages his vivid thinking.

Karl's mathematical ability was revealed very early. Later, he says that he first learned to count and then to speak. His father often performed various arithmetical calculations on behalf of the city administration. One day, Gerhard Gauss, Carl's father, was doing some calculations out loud. Before the end of the calculation, he was surprised to hear the words of the three-year-old Karl: "Dad, the calculation you are doing is wrong, it should be like this." Carl reported the result. Upon investigation, it turned out that Carl's number was indeed correct.

His father was against his studies, but due to the insistence of Carl's onasia - Dorothea, he was forced to change his mind. Karl started attending school from the age of seven, where mathematics was taught from the third grade. At school, his mathematical ability was quickly noticed. There were about a hundred students in the class. One day, the teacher, in order to occupy the children who were in a riot, ordered them to find the sum of the following 100 numbers:

81297 + 814954-81693 + ...+ 100899, each of these numbers (additives) was 198 more than the previous one. Knowing that the children could not work on this example, the teacher began to do other things. Indeed, the children sweated for an hour, but no one but Gauss could come up with the right answer. As soon as the teacher finished writing the assignment, Gauss placed his blackboard on the teacher's desk. The teacher, who remained Lol, said that he could no longer teach Gauss, and that he could not give him anything. Bartelgs, the teacher's assistant, started working with Karl separately.

Gauss read many serious mathematical books with Bartelgs. At the request of Bartelgs, the Duke of Braunschweig provided material opportunities for Gauss to continue his studies. Gauss received a stipend from the Duke's funds until he finished his doctoral thesis.

In 1795, Gauss graduated from the gymnasium and entered the University of Göttingen. He independently studied the works of famous mathematicians such as Newton, Lagrange, Euler in detail. While still a student, Gauss made a number of mathematical discoveries. The most prominent of them is the proof that 17 regular angles can be made using a circle and a ruler (1796). Before Gauss, methods of In the same year, he looked at the cases where the two-dimensional equation $x^p—1=0$ can be solved in square radicals and, accordingly, the possible cases of dividing the circle into the appropriate number of equal parts using a circle and a ruler. came out We now easily solve this equation by using the unit circle and the coordinates of the points formed by dividing the circle into p equal parts in the complex plane. At that time, there was no such possibility, which is why the Gaussian method caused a stir.making 3, 4, 5, 15 angles, as well as polygons formed by doubling their sides were known.

Earlier, Gauss developed and seriously justified the formula for summing the degree of the binomial at any rational values of the indicator. (I. Newton derived the formula only for natural values of the binomial degree.) In fractional exponents, the sum is infinite, and its value is not always the same as the value of the given binomial degree. Mathematicians of that time did not pay much attention to the necessity of relevant studies.

In 1797, the main theorem of Gauss algebra that any algebraic equation with any coefficients has a real and abstract root and equivalently any rational algebraic function of one variable is real multipliers of the first and second order. gave, in fact, the first and definitive proof of the assertion that it can spread.

It follows from these assertions that the left side of the equation $x^p + a_1x^{gg-1} +…+a_{ya} =0$ can be represented in the form of a product of linear multipliers: $(x—x_x)$ $(x—x_2)$ $(x—x_3)$ … (x—x.,) ~0, where $x_{g'}$—are the roots of the given equation. If we open all the parentheses, we get $a_{„} = (—1)"$ $x_gx^x_h$ . . . x_p. This allows us to find all the roots of the equations by selecting and checking the divisors of the free term. For this work, Gauss received the title of doctor. During these years, Gauss made many discoveries in mathematics. Gauss, while investigating the problem of the number of digits in a period in converting a simple fraction into a periodic fraction, developed the very important issues of the number theory apparatus - the theory of comparison and further developed its rules and important applications, created the theory of quadratic deductions, discovered the law of reciprocity of quadratic deductions. These are very important and complex mathematical studies. It is quadratic formulas with two and three variables, $ax^2 + 2G'xu + su^2 = t$ (where a, x, s, t ~ are integers) and ax^2-{-2xu + su^2-\-2(1xg-\-+ /.$g^2 = t$ (He found conditions for indeterminate equations of the form $ax^2 + su^2 + /g^2 = t$ va $tx^2 + pu^2$ — A (where all the coefficients are integers) to have integer solutions. investigated in detail the relations between the coefficients in which these equations have complete solutions.

Gauss was engaged in number theory throughout his life and made many discoveries in this field of mathematics. He made a great contribution to algebra, which is called modern algebra: the theory of groups, rings, fields. He applied the laws of number theory to the set of complex numbers, gave a geometric interpretation of complex numbers, and a method of representing

complex numbers with plane points. Inserting the symbol of the abstract unit I = u —1 and writing the complex number now is a + G‘1 Gaussian. He showed that in mathematical research and practical applications, the abstract unit has the same importance as the real numbers.

Gauss's work on number theory and arithmetic inspired the research of other scientists.

Gauss' services in the development of astronomy are also great. In 1801, based on a series of observations, Gauss calculated the orbit of Ceres, a small planet that had been discovered a year earlier and disappeared in the Sun's rays. Gauss told exactly where it stood, and astronomers found this planet in the indicated place. This brought Gauss fame as a mathematician. He wrote a work called "Theory of motion of celestial bodies revolving around the Sun". Although nothing new was discovered in this work, new, simpler methods of calculating the orbits of the planets were developed. All this allowed Gauss to hold the position of director of the Göttingen observatory and at the same time a university professor. He headed the observatory until the end of his life.

Gauss made a great contribution to the investigation of complex variable functions and the theory of elliptic functions. Since 1820, he led the geodetic work on the drawing of the plan of the state (kingdom) of Hanover. Dealing with geodesy motivated the development of number theory. Pre-Gaussian checks were carried out only in the plane. He developed the basics of the theory of internal geometry of an arbitrary surface (the length of the arc of a curve on a given surface, the angles between the arcs, the face of the surface of the figure, the geodesic lines on the surface).

Gauss discovered and proved the main theorem of the geometry of surfaces about the complete curvature at a given point. The total curvature of a surface at a given point is now called Gaussian curvature.

Gauss conducted serious experiments on electricity. In particular, he developed and introduced the concept of electric field potential, made the electric telegraph.

Gauss was a cheerful person, interested in literature and economics. He knew a number of ancient and European languages. However, the distinguishing feature of his character was determination and persistence in achieving the goal he set for himself. When he started to solve a problem, he did not let the work come to an end, he did not back down. At this time, if any difficulty arose, he would solve another problem at the same time, but he would not abandon the previous work.

Gauss liked to work alone. He didn't have students, he didn't share his thoughts with anyone. He did everything independently.

In 1824, Gauss was elected a foreign member of the St. Petersburg Academy of Sciences, and for the rest of his life he was in regular scientific contact with the academy. In 1962, he studied Russian and studied at the Academy. The correspondence was conducted in Russian. He loved to read the works of Pushkin and other Russian poets and writers of that time.

Gauss died on February 2, 1855 at the age of 78. During his lifetime, he was called the king of mathematics. Gauss's works have not lost their importance even in our time.

REFERENCES

1. Махмудов А.Х., Джураев Р.Х., Якубов Ж.Н., Каримов К.А., Усмонова З.Б. Дидактические возможности шахмат в развитие творческого мышления школьников Издательство «Nodirabegim» Ташкент 2021. - 128 с.
2. Махмудов А.Х., Джураев Р.Х., Диагностика способностей к обучению шахматам учащихся начальных классов Издательство «Nodirabegim» Ташкент 2020. - 40 с.
3. Махмудов А.Х., Якубов Ж.Н., Камилова А.Б., Ахунжанов А.Т. Шахматы Первый год обучения Издательство «Nodirabegim» Ташкент 2021. - 96 с.
4. Ж.Н. Якубов Шахматни ўргатишда математика ва геометриянинг ўрни. Аниқ ва табий фанларни ўқитишнинг замонавий методологияси: муаммо ва ечимлар мавзусида Республика илмий-амалий онлайн конференция. – Т.Н.Қори Ниёзий номидаги ЎзПФИТИ Т 2021 й. 26 апрель.
5. Б.С. Гершунский, А.Н. Костьев Шахматы – школе /. – М: Педагогика, 1991- 336 с.
6. Soboleva, E. V., Zhumakulov, K. K., Umurkulov, K. P., Ibragimov, G. I., Kochneva, L. V., & Timofeeva, M. O. (2022). Developing a personalised learning model based on interactive novels to improve the quality of mathematics education. Eurasia Journal of Mathematics, Science and Technology Education, 18(2), em2078.
7. Жумақулов, Хуршид Кадыралиевич, and Мухсин Салимов. "О МЕТОДАХ ПРОВЕДЕНИЯ И СТРУКТУРЕ ПЕДАГОГИЧЕСКОГО ЭКСПЕРИМЕНТА." Главный редактор (2016): 80.
8. Х.Жумакулов, В.К.Жаров. О статической безграмотности выпускников педагогических вузов и не только. Международный гуманитарный научный форм "Гуманитарные чтения РГГУ-2019 "Непрерывность и разрывы: социально-гуманитарные измерения"". – Москва, 2019. –С. 119-123.
9. Esonov, M. M., and D. D. Aroev. "ON THE BASICS OF EDUCATION OF MATHEMATICAL THINKING IN THE MODERN COURSE OF GEOMETRY IN A COMPREHENSIVE SCHOOL." European Journal of Research and Reflection in Educational Sciences 9.3 (2021).
10. Ароев, Дилшод Давронович. "ИСПОЛЬЗОВАНИЕ ПОНЯТИЙ" АРИФМЕТИЧЕСКИЕ ДЕЙСТВИЯ НАД МНОГОЗНАЧНЫМИ ЧИСЛАМИ" В МАТЕМАТИЧЕСКИХ ИГРАХ." Актуальные научные исследования в современном мире 12-4 (2016): 16-18.
11. Ароев, Д. Д., and Г. М. Бабаева. "ABOUT THE IMPORTANCE OF INTERESTING EXERCISES IN MATHEMATICS LESSONS." Экономика и социум 2-1 (2021): 488-491.
12. АБДУНАЗАРОВА, ДИЛФУЗА ТУХТАСИНОВНА, МАНЗУРА СОБИРОВНА ПАЙЗИМАТОВА, and МИРСАИД МУХИДДИН УГЛИ СУЛАЙМОНОВ. "ПРОБЛЕМА ПОДГОТОВКИ БУДУЩИХ ПЕДАГОГОВ К ИННОВАЦИОННОЙ ПЕДАГОГИЧЕСКОЙ ДЕЯТЕЛЬНОСТ." Молодежь и XXI век-2015. 2015.
13. Расулова, Г. А., З. С. Аҳмедова, and М. Норматов. "МЕТОДИКА ИЗУЧЕНИЯ МАТЕМАТИЧЕСКИХ ТЕРМИНОВ НА АНГЛИЙСКОМ ЯЗЫКЕ В ПРОЦЕССЕ ОБУЧЕНИЯ." Ученый XXI века (2016): 65.
14. Расулова, Г. А., З. С. Аҳмедова, and М. Норматов. "EDUCATION ISSUES LEARN ENGLISH LANGUAGE IN TERMS OF PROCESSES." Учёный XXI века 6-2 (19) (2016): 62-65.
15. Расулова, Г. А. "МУЛЬТИМЕДИЙНЫЙ ЭЛЕКТРОННЫЙ УЧЕБНИК-СОВРЕМЕННОЕ СРЕДСТВО ОБУЧЕНИЯ." Педагогические науки 4 (2011): 65-66.