GALAXY INTERNATIONAL INTERDISCIPLINARY RESEARCH JOURNAL (GIIRJ)
ISSN (E): 2347-6915
Vol. 11, Issue 07, July (2023)

USE OF HISTORICAL DATA IN HIGHER EDUCATION GEOMETRY LESSONS

Maqsudova Shahnoza Azizbek qizi
Kokand State Pedagogical Institute

ANNOTATION

The article describes the historical data presented in the Geometry textbooks and methods of their using continuously in the teaching process. A consistent sequence of historical data is described in terms of classes.

Keywords: geometry textbooks, historical data, continuity, consistency.

President Of The Republic Of Uzbekistan Sh. In accordance with Mirziyoyev's decision on May 7, 2020 “on measures to improve the quality of education and development of research in the field of mathematics in Uzbekistan”, a number of systematic works were carried out in Uzbekistan aimed at establishing mathematics as one of the priorities for the development of Science in 2020, bringing mathematics science and education to a newю

The younger generation, which is building the future of our republic, should be given the opportunity to study the innovations of modern science, its complex facets, as well as to study our past heritage.

The ancient Greek mathematician and astronomer Hippocrates of Chios (second half of the 5th century BC) brought the problem to the problem of making "two intermediate proportional" and sections between the given sections a and b, that is, to make sections x and y satisfying the following continuous proportion brought The solutions to this problem were found using other means by Architus Tarentesky, Eudoxus Knidsky (408-355 BC), Eratosthenes of Cyrene (276-194 BC), Nicomedes (III-II centuries BC). Apollonius Pergsky (262-190 AD). Heron of Alexandria (probably 1st century) and Pappus (second half of the 3rd century) also described

The second problem is called trisection of an angle (from the Latin words "tria" - three and "section" - dividing, cutting) and consists of dividing the angle into three equal parts using a circle and a ruler. This problem was solved in some special cases, the Pythagoreans used the fact that each angle in an equilateral right triangle is equal to 60° and divided the angle into three equal parts.

For thousands of years, attempts to solve this problem have failed. Only in the 80s of the XIX century it was proved that it is impossible to square a circle using a circle and a ruler. German mathematician Carl Louis Ferdinand Lindemann (1852-1939) in 1882, French mathematician Sh. Using Hermit's work, he proved that the number is a transcendental number, by which he proved that the quadrature of a circle cannot be solved using a circle and a ruler.

The problem of squaring a circle has a solution when tools other than a circle and a ruler are used. For example, AD. avv. Greek mathematicians Dinostratus and Menechmus of the 4th century used a transcendental curve called the quadratrix, introduced by Hippias Elidis, to solve this problem. This curve is used to divide a circle into sections proportional to different line segments. Likewise, Diocles (2nd century BC) discovered the curve for bisecting a cube, which later became known as the sissoid and was used to construct two intermediate proportionals.

Philosopher Zeno Eleisky (490-430 BC) took a stab at mathematics and wrote his 45 aporias (apori-impossible, dead end, incomprehensible), stating that the concept of infinity in a non-mathematical form leads to logical contradictions. had passed.

Zeno's student Democritus (460-380 BC) developed mathematics from the point of view of atoms. It treats points as indivisible atoms of space with finite volume. In that case, the different line segments are finite, but there are infinitely many points on it. It follows from this that the surface is made up of the sum of the sections, and the bodies are made up of the surfaces of the sphere. This creates the opposition between the finite and the infinite in mathematics.

The theory of ratios created by the ancient Greek mathematician and astronomer Eudoxus Knidsky (about 406-365 BC) became the most perfect theory of real numbers until the second half of the 19th century. Eudoxus was one of the first to develop the doctrine of limits. Based on this theory, he created methods for calculating the limits of various sequences. As a result, it became possible to calculate the surface and volumes of various shapes bounded by curved lines, curved surfaces. Until the discovery of differential and integral calculus, this method was the most reliable and general way to solve quadrature and cubature problems.

Ancient Greek scientists made the first steps in establishing geometry as an independent science. For example, Hippocrates Chiossky described his initial ideas about the foundations of geometry. The main work in this field was carried out by the great Greek scientist Euclid (around 356-300 BC). His main work "Fundamentals" includes some issues of planimetry, stereometry and number theory, as well as algebra, the general theory of proportions, the method of calculating surfaces and volumes, and the theory of limits. In "Fundamentals" Euclid summarized all the achievements of ancient Greek mathematics and laid the foundation for its development.

"Fundamentals" consists of 13 books, and according to the Dutch mathematician Van-Der-Waerden (born in 1903), this work is a reworking of the works of Greek mathematicians of the 5th-4th centuries BC:

Books 1-4 (planimetry) — reworking of Hippocrates of Chiossky "Fundamentals";

Book 5 (the theory of proportions of geometric quantities), book 6 (theory of similarity) and book 12 (circular bodies) - development of the work of Eudox Knidsky (408-355 AD);

7-8 books (number theory and numerical proportions), 11 books (fundamentals of stereometry)—development of the work of Arkhit Tarentsky;

13 books (regular polynomials) and 10 books (irrational quantity theory) —— Development of the work of Theaetetus Afinsky.

This encyclopedic work was used as a manual until the 16th century in manuscript form, and was first published in 1482. The work contains 23 definitions, 5 postulates and 9 axioms. The historical importance of "Fundamentals" lies in the fact that it was the first attempt to develop a logical structure of geometry based on axiomatics. The axiomatic method used in modern mathematics was also used from this work.

Correct definitions of rectangle, square and circle are given in the work. A point is defined as follows: "A point is something that has no parts." A line is defined as follows: "A line is a length without width."

Arab mathematician Ibn Qarra Abul-Hasan Thabit as-Sabi al-Harrani (836-901) translated "Negizlar" into Arabic, wrote commentaries on it and tried to prove postulate V, "simple" motion (progress, all trajectories are straight) ri consists of a line) assumed the existence. In that case, two arbitrary trajectories are equidistant straight lines, and this proves the parallelism postulate.

Uzbek mathematician, poet, astronomer and philosopher Umar Riyasiddin Abu-l Fakht ibn Ibrahim Hayyam (15.05.1048-14.12.1131), Arab mathematician Ibn Al-Haysam al-Basri (Alghazen) (965-1039) (his son 4 manuscripts of unique mathematical and astronomical works are kept in the library of the Samara region). (he repeated the proof of Sabit ibn Qorra) and rejects the hypothesis that there is a "normal" motion. Based on the works of the Greek scientist Aristotle (384-322 BC), he states a new postulate: two "approaching" straight lines intersect in a plane, that is, the approach cannot turn into a departure on two non-intersecting straight lines.

REFERENCES

1. O‘zbekiston Respublikasi Prezidenti Sh.M.Mirziyoyevning 2020 yil 7 maydagi PQ-4708-son “O‘zbekistonda matematika sohasidagi ta’lim sifatini oshirish va ilmiy-tadqiqotlarni rivojlantirish chora-tadbirlari to‘g‘risida”gi qarori. Chiqish ma’lumotlari.
2. A.A’zamov, B.Haydarov, E.Sariqov, A.Qo‘chqorov “Geometriya” 7-sinf darslik –T.: “Huquq va Jamiyat”, 2017-yil.
3. B.Haydarov, E.Sariqov, A.Qo‘chqorov “Geometriya” 9-sinf darslik –T.: “Huquq va Jamiyat”, 2019-yil.
4. M.A Mirzaahmedov, Sh.N. Islamov va b. “Matematika-10” – T.:”O‘qituvchi”, 2017-yil.
5. M.A Mirzaahmedov, Sh.N. Islamov va b. “Matematika-11” – T.:”O‘qituvchi”, 2018-yil.
6. Расулова, Г. А. "МУЛЬТИМЕДИЙНЫЙ ЭЛЕКТРОННЫЙ УЧЕБНИК-СОВРЕМЕННОЕ СРЕДСТВО ОБУЧЕНИЯ." Педагогические науки 4 (2011): 65-66.
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.