

COLLECTION

Innovation, integration and modern
problems in the scientific activities of young
researchers and students: theory and
practice

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31
MARCH



Jizzakh, Uzbekistan

MINISTRY OF HIGHER EDUCATION, SCIENCE AND INNOVATION OF
THE REPUBLIC OF UZBEKISTAN

JIZZAKH BRANCH OF THE NATIONAL UNIVERSITY OF UZBEKISTAN
NAMED AFTER MIRZO ULUGBEK

SCIENTIFIC JOURNAL OF SCIENCE TECHNOLOGY & DIGITAL FINANCE
JOURNAL OF INTERNATIONAL SCIENCE NETWORKS

Innovation, integration and modern problems in the scientific activities of young
researchers and students: theory and practice collection of materials of the
international scientific and practical conference on the topic

(March 31, 2026)

Jizzakh-2026

Innovation, integration and modern problems in the scientific activities of young researchers and students: theory and practice – Jizzakh: Department of economics and tourism of Jizzakh branch of the national university of Uzbekistan named after Mirzo Ulugbek, March 31, 2026, 990 pp.

Editors in charge: Ass.prof. Soy M.P.

In the collection of materials of the conference, the role and role of Science, Education and production in the era of globalization, the pressing problems of the issues of interaction of these processes, feedback on their solutions were presented by mature specialists of the field.

In addition, research on the scientific and practical topic, carried out in the economics, Exact Sciences, Natural Sciences and socio-humanities during the globalization period, information is presented in the scientific and practical fields, which includes the latest innovative technologies in the fields of production.

It can be argued that this collection is one of the specific intersections of current thoughts and innovative ideas of the world of science. This scientific and practical conference was actively attended by professors and scientific researchers engaged in scientific research in Uzbekistan and foreign countries. In increasing the position of the scientific and practical conference, the professors and teachers of domestic and foreign higher educational institutions made a significant contribution.

Professors and teachers of foreign higher educational institutions who actively participated in the work of the conference made a worthy contribution to the high level of interaction with scientists of our country. The processes of international cooperation with foreign countries and exchange with them in the field of Science in the era of globalization have a positive effect on the development of Higher Education, the fields of Science and production. The materials of this conference are special in that they include a wide range of research, from theoretical developments to practical solutions, demonstrating the diversity of approaches and directions in this area.

In conclusion, it should be noted that this scientific and practical conference will be a very useful collection for everyone who is interested in modern research in the fields of further development of Higher Education, Science, Education and production in the era of globalization. The authors are responsible for the content and quality of the articles and abstracts included in the collection.

BA'ZI TURDAGI MURAKKAB MISOLLARNI QULAY USULLAR YORDAMIDA YECHISH USULLARINI KELITIRIB CHIQRISH

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Annotatsiya: Bizning maktablarimiz, litsey, oliy o'quv yurtlari va kasb hunar maktablari kabi bilim maskanlarida matematika fanining o'rni juda yuqori hisoblanadi. O'quvchilar turli xildagi misollarni qulay usullarda yechishni kitoblar va qo'llanmalardan o'rganishadi. Bu maqola shunday misollardan bazi turdagilarini qulay usulda hisoblash bilan birgalikda, formulalarni keltirib chiqarishni ham o'quvchilarda shakllantiradi.

Kalit so'zlar: Qatorlar, tenglama, progressiya, ketma-ketlik, funksiya, aniqlanish soha, teng kuchlilik, formula, tenglamaning ildizi, tranzitivlik, yechim, soddalashtirish, xossalalar, almashtirish, cheksiz, oraliq, hosila, grafik, ishora va hkz.

Ma'lumki, bugungi kunda barcha soha va yo'nalishlarda malakali kadrlar tayyorlash va raqamli iqtisodiyotga o'tishda matematik bilimlarga tayanilmoqda. Bu esa maktab, litsey va oliy o'quv yurtlarida matematika darslarni yaxshi o'zlashtirishga bog'liqdir. Buning uchun yurtimizda ko'plab yangi islohatlar amalga oshirilmoqda, jumladan, Prezidentimiz SH.M.Mirziyoyevning 2020 yil 7-maydagi "Matematika sohasidagi ta'lim sifatini oshirish va ilmiy tadqiqotlarni rivojlantirish chora tadbirlari to'g'risida" nomli PQ-4708 qarori [1] da – Ta'limning barcha bosqichlarida matematika sohasidagi ta'lim sifatini oshirish bo'yicha dolzarb vazifalar belgilab berilgan.

Biz shuni ko'rib chiqamizki, turli xil ketma-ketliklar mavjud. Arifmetik va geometrik progressiyalar ham huddi shunday tartibli ketma-ketliklar hisoblanadi. Progressiyalar turli formulalar yordamida hisoblanishini barcha matematika fanini o'rganuvchilar juda yaxshi bilishadilar.

Men o'z maqolamda sonli ketma- ketliklarga oid bitta misolning yechilish usullarini ko'rsatib o'tmoqchiman.

Misolning ko'rinishi quyidagicha:

1-misol: 1,2,2,3,3,3,4,4,4,4,5,5,5,5,6,6,.....

ushbu ketma- ketlikning 2017- xonadagi hadini toping.

Yechish: Ushbu misolda etibor bersak ketma-ketlik ma'lum qoida asosida o'zgarib kelmoqda, ya'ni har bir verguldan keyingi sonlar o'z soni marta takrorlanib kelmoqda. Endi biz 2017-xonadagi sonni topish uchun yana turli qonuniyatlarni topishga harakat qilamiz. E'tibor bersak bu yerda arifmetik progressiya yordamida har bir takrorlangan sonning oxirgi turgan o'rnini topishimiz mumkin. Buni ko'rsatib o'tamiz.

Dastlab biz 1 xonali sonlar uchun formula topib olamiz. Bu formulaga yuqoridagi misoldagi formulani olishimiz mumkin.

$$\frac{1+n}{2} \cdot n$$

2 xonalilar uchun ham formula hosil qilib olamiz.

$$\frac{10+n}{2} \cdot (n-9)$$

Biz izlayotgan sonlar 3 xonali bo'lmaydi. Chunki yuqoridagi misolda javob 64 chiqqan edi. Bu misolda albatta undan kichik son hosil bo'ladi. Demak biz ikki xonali sonlar uchun formula tuzib olishimiz yetarli bo'ladi.

$$\frac{1+n}{2} \cdot n + \frac{10+n}{2} \cdot (n-9)$$

Formulaga $n = 11$ qo'yib hisoblab ko'ramiz. $\frac{1+11}{2} \cdot 11 + \frac{10+11}{2} \cdot (11-9) = 6 \cdot 11 + 21 \cdot 1 = 66 + 21 = 87$ bundan ko'rinib turibdiki 11 sonining eng oxirgi takrorlanganida 1 raqami 87-xonada turibdi.

Formulaga har o'nlikdan son tanlab qo'yib ko'rishimiz mumkin.

$n = 45$ ni qo'yib ko'ramiz.

$$\frac{1+45}{2} \cdot 45 + \frac{10+4}{2} \cdot (45-9) = 23 \cdot 45 + 55 \cdot 18 = 2025$$

$n = 44$ ni qo'yib ko'ramiz.

$$\frac{1+44}{2} \cdot 44 + \frac{10+44}{2} \cdot (44-9) = 45 \cdot 22 + 27 \cdot 35 = 1935$$

Demak shuni bilishimiz mumkinki 44 sonining eng oxirgi takrorlanganida 4 raqami 1935-xonada turibdi, shundan keyin 45 soni 45 marta takrorlangan va 45 sonining eng oxirgi takrorlanganida 5 raqami 2025-xonada turibdi.

Demak,

$$1,22,333,\dots,44,44,\dots,44,45,45,45,\dots \underset{2017\text{-xona}}{5}, 45,45,45,45,46,\dots$$

Demak ko'rinib turibdiki 2017-xonada 5 raqami joylashgan.

Javob: 5

Agar ushbu misolni katta sonlar uchun ham hisoblash kerak bo'lsa 3 xonalilar uchun ham formula hosil qilish mumkin. Qonuniyat yordamida buni hisoblash mumkin.

$$\frac{1+n}{2} \cdot n + \frac{10+n}{2} \cdot (n-9) + \frac{100+n}{2} \cdot (n-99) + \dots$$

Ushbu formula yordamida 1,2,2,3,3,3,4,4,4,4,5,5,5,5,5,6,... kabi misollarni yechishda n chi xonadagi raqamni topish mumkin.

Foydalanilgan adabiyotlar:

1. В.В.Вавилов и др. «Уравнения и неравенства». «Наука», М., 1987.
2. М.И. Абрамович va boshqalar. «Математика», 1-qism. Toshkent, «O'qituvchi», 1985.
3. М. Saxayev. «Algebradan masalalar to'plami». Toshkent, «O'qituvchi», 1987.

4. S.Abdullayev, T.Karimov, K. To‘raqulov “Maktabda tenglama va tengsizliklar”. Toshkent, “O‘qituvchi”, 1992.
5. Sh. Tojiyev. “Tenglamalarni yechishda yo‘l qo‘yilgan xatolar”. “Sovet maktabi” 1984.
6. Bo‘ltakov S. O ‘ZBEKISTONDA BALIQCHILIKNI RIVOJLANTIRISHNING IQTISODIY ISTIQBOLLARI //Scientific practical conference. – 2025. – T. 1. – №. 1. – C. 565-567.
7. Bo‘ltakov S. BALIQCHILIKDA IQTISODIY SAMARADORLIKNI VAHOLASH MEZONLARI //Scientific practical conference. – 2025. – T. 1. – №. 1. – C. 366-371.
8. Bo'ltakov S. et al. TURIZM SOHASIDA RAQAMLI IQTISODIYOTNI ANAMIYATI //Универсальная индексная библиотека Евразийского журнала академических исследований. – 2022. – Т. 2. – №. 12. – С. 60-62.
9. Bo‘ltakov S. Innovatsion Usulda Baliq Yetishtirishning Iqtisodiy Samaradorligini Oshirish Yo ‘llari (Sirdaryo Tumani Misolida) //Green Economy and Development. – T. 3. – №. 9. – C. 666837.
10. Saloxitdinov S. OLIY TA’LIM MUASSASALARIDA TA’LIM XIZMATLARI SIFATINI OSHIRISHDA MUHIM OMILLARNI VAHOLASH //Scientific practical conference. – 2025. – T. 1. – №. 1. – C. 99-102.
11. Бобаназарова Ж. Х., Салохитдинов Ш. Ф. Ў. ОЛИЙ ТАЪЛИМ ТИЗИМИДА БОШҚАРИШ САМАРАДОРЛИГИНИНГ ЎЗИГА ХОС ХУСУСИЯТЛАРИ //Science and innovation. – 2023. – Т. 2. – №. Special Issue 5. – С. 303-306.
12. Po‘latova R., Saloxitdinov S. ZOMIN TUMANIDAGI TURISTIK OB’EKTЛАRNING RENTABELLIK DARAJASI VA ULARNING HUDUDIY IQTISODIYOTGA TA’SIRI //Scientific practical conference. – 2025. – T. 1. – №. 1. – C. 263-267.
13. Xolmo‘minova D., Saloxitdinov S. YASHIL OMBOR XO ‘JALIGI VA LOGISTIKA INFRATUZILMASI //Scientific practical conference. – 2025. – T. 1. – №. 1. – C. 170-172.
14. Saloxitdinov S., Zayniddinova L. JIZZAX VILOYATI HUDUDLARINING IQTISODIY O‘SISHINI BOSHQARISH MEKANIZMI VA STRATEGIYASI //Scientific practical conference. – 2025. – T. 1. – №. 1. – C. 52-56.
15. G‘Aybullayev Sarvar O. et al. O ‘ZBEKISTONDA ISTE’MOL SAVATCHASI HOZIRGI HOLATINI VA UNI SHAKILLANTIRISH YO ‘NALISHLARI //Talqin va tadqiqotlar ilmiy-uslubiy jurnali. – 2022. – T. 1. – №. 4. – C. 119-125.
16. Akramovich N. A., Sarvar G., Yassim H. THE PLACE OF THE DIGITAL ECONOMY TODAY //Journal of Academic Research and Trends in Educational Sciences. – 2022. – T. 1. – №. 12. – C. 95-99.
17. Sarvar G., Sirojiddin S., Xushnudbek P. FACTORS AFFECTING LABOR RELATIONS AND ITS WAGE //Journal of Academic Research and Trends in Educational Sciences. – 2022. – T. 1. – №. 12. – C. 126-129.