**RESOLUTION**

**of the VII TWMS Congress**

The VII TWMS Congress was held on September 20-23, 2023 in Turkestan on the basis of the International Kazakh-Turkish University named after H.A. Yasawi. The second plenary session was dedicated to the 70th anniversary of Academician Bakytzhan Zhumagulov.

**The main purpose** of the Congress is to expand international relations and scientific cooperation of scientists, to promote the development of mathematical science and the application of the achievements of mathematics, information technology in scientific research, technology and education.

**The main directions of the Congress:**

1. Differential equations and equations of mathematical physics.

2. Theory of functions and functional analysis.

3. Algebra, mathematical logic and geometry.

4. Probability theory and mathematical statistics.

5. Inverse and ill-posed problems.

6. Optimal control.

7. Mathematical and computer modeling.

8. Computational and information technologies.

9. Theoretical and applied mechanics, continuum mechanics.

10. Methods of teaching mathematics and the history of mathematics. Topical problems and prospects for the development of mathematics were discussed in 8 plenary reports and 10 breakout sessions. 527 scientists from 20 countries participated in the breakout sessions, 405 reports were heard. Topical issues of all directions of mathematical science development are considered.

Plenary reports were delivered by scientists from Turkey, Azerbaijan, Uzbekistan, Turkmenistan, Kyrgyzstan, Russia and Kazakhstan. Heads of mathematical departments and leading scientists from all over Kazakhstan were invited to the Congress.

Reports on topical areas of mathematics were presented at the plenary session. Scientists and highly qualified specialists in the fields of differential equations, functional analysis, mathematical and computer modeling, inverse and ill-posed problems, delivered presentations.

The breakout sessions of the VII TWMS Congress fully reflect all 10 priority areas of mathematics.

A number of reports were devoted to the methodology of teaching mathematics, STEM education, informatization of education.

Based on the results of the VII TWMS Congress, the following draft Decisions are proposed:

**DECISIONS**

I. To improve the level of teaching mathematics in secondary education to the **Ministry of Education of the Republic of Kazakhstan:**

1) To carry out a scientifically based transformation of the content of school mathematics (subjects of the natural-mathematical cycle as a whole) in the context of the requirements of activity-competence, digital and STEM approaches.

2) To improve the content of lyceums and physics and mathematics schools, taking into account the request of STEM education and the industrial-digital era of human development.

3) Along with modern methods of teaching mathematics, it is necessary to carry out a wide introduction into school practice of pedagogical technology of a three-dimensional methodical system of teaching as an effective didactic tool that guarantees the qualitative development of educational material by all students.

4) To carry out a systematic analysis of the quality of textbooks and mathematical education in secondary school. To develop a program for methodological support of teaching mathematics.

II. To increase the level of scientific research in mathematics and to train competitive specialists to the Ministry of Science and Higher Education of the Republic of Kazakhstan:

5) To introduce into the curriculum of the profile training of the school "technological profile", where the transition from subject to project training is implemented, aimed at solving real applied problems from various spheres of life through network interaction: school – additional education – type – university – production.

6) To develop new educational programs of higher pedagogical education that provide targeted training for teachers of STEM education, which provide for the study of the section "Pedagogical Technologies" by future teachers as part of the course "Modern Didactics".

7) Support initiatives of cooperation of research institutes and universities with world mathematical research centers.

8) To expand the work on improving academic mobility with universities that have mathematical schools of global recognition. To expand the work on borrowing and adapting progressive foreign training programs for scientific personnel.

9) To enhance scientific research on the creation of application software packages for the numerical solution of mathematical physics problems.

10) Expand research aimed at maximizing the development of methods of mathematical and computer modeling of physical, chemical and other processes.

III. In order to expand international relations and scientific cooperation of scientists, mathematical societies of Turkic countries need:

11) Collectively, under the auspices of the Mathematical Society of the Turkic World, develop a TWMS Concept for the development and Improvement of Mathematical Education and enter into a joint program that would be a useful and scientifically sound recommendation document for the leadership of the TWMS member countries.

12) To make TWMS efforts to solve the problem of personnel and educational insufficiency in the field of supercomputers, to develop programs and disciplines of supercomputer education, retraining courses for already established specialists and teachers.

13) To create a new generation of application software packages for solving certain classes of mathematical physics problems, the strategic goal of which is to create an integrated computing and information environment with the participation of a wide range of developers from different countries in close cooperation between scientists and engineers.

14) Consolidate around the journals "TWMS Journal Pure and Applied Mathematics", "TWMS Journal Applied and Engineering Mathematics", to assist them both with publications and other methods.

15) Before the next Congress, determine the legal status of the Mathematical Society of the Turkic World as a full-fledged legal entity and receive official support from the Organization of Turkic States and the heads of its member countries.