

DILEMMA OF MATHEMATICS



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**1st JOURNAL CONFERENCE ON APPLIED
PHYSICS AND MATHEMATICS
(JCAMP'2014)**

DILEMMA OF MATHEMATICS

❑ MATHEMATICS QUOTES

- Mathematics is the language with which God has written the universe.
(Galileo Galilei)
- Mathematics is the Queen of Sciences.(Carl Friedrich Gauss)
- Mathematics is Mother of all Sciences. Sameenak
- Mathematics is the supreme judge; from its decisions there is no appeal. Tobias Dantzig
- Mathematics is the entrance and pivotal ingredient of the Science.
Roger Bacon
- Science is exact only in so far as it employs Mathematics(Kant).

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- Biologists think they are biochemists, Biochemists think they are Physical Chemists, Physical Chemists think they are Physicists, Physicists think they are Gods, And God thinks he is a Mathematician.
- Mathematics is Science of all Sciences and Art of all Arts.
- Mathematics is significant in our daily life and an essential ingredient in nation development.

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❑ DEFINITION

- Mathematics may be defined as the subject in which we never know what we are talking about, nor whether what we are saying is true (Bertrand Russell)
- Mathematics is the most exact science, and its conclusions are capable of absolute proof, but this is so only because mathematics does not attempt to draw absolute conclusion(Charles Steinmetz).
- Aristotle defined mathematics as "the science of quantity",
- "Mathematics is what mathematicians do.
- Mathematics Subject Classification runs to 46 pages

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- According to Webster's International Encyclopedia "Mathematics is a field of thoughts concerned with relationship involving concepts of quality, space and symbolism".
- Three leading types of definition of mathematics are called logician, intuitionist, and formalist, none has widespread acceptance.
 - ❖ Benjamin Pierce said, "Mathematics is the science, which draws necessary conclusions".
 - ❖ L.E.J. Brouwer, identify mathematics with certain mental phenomena.
 - ❖ Haskell Curry defined mathematics simply as "the science of formal systems"

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- ❑ LOGS virtually means knowledge;
- ❖ “L” stands for language that is mathematics is a language, which is indispensable for expressing scientific ideas. Galileo Galilei, “Mathematics is the language with which God has written the universe”
- ❖ “O” stands for operation that is mathematics is a computational skill/tool to answer logical, quantitative questions.
- ❖ “G” stands for game that is mathematics is a game played within a domain with certain rules and regulations that is postulates/axioms determine the domain and related rules and regulations and provide foundations for further improvement. Richard J. Trudeau said, Pure mathematics is the world's best game.

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- ❖ “S” stands for science that is mathematics is a science, which is in a creative process for precision, truth through logical reasoning. In line with this claim, **Kasner** and **Newman** said “Mathematics is the science which uses easy words for hard ideas”.

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- **SCIENCE OR NOT**
 - According to Modern science scientific criteria for something to be science is that its nature must be **empirical**. Consequently, many scholars do not consider mathematics as science but they consider mathematics as instrument of science.
 - Some scholars argue that “science is reasoning; reasoning is mathematics; They consider mathematics as Mother of all Sciences.
 - Muslim scholars believe in the ontological reality and consider mathematics as science.

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❑ MYTHICAL ISSUES

- Mathematics is hard.
- Men are better in Mathematics than women.
- Mathematics is not creative.
- In Mathematics you must get always right answer.
- Mathematician does problems quickly, in their head.
- Mathematics required a good memory.
- Some people have a “Mathematics Mind” and some don’t.
- Calculators can do all the mathematics for me.
- You’ll never use this stuff again.

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❑ MATHEMATICS IN CRISES

- **Marketability:** From 2001 to 2007 the number of students enrolled in mathematics major in Australian universities declined by 15%. The number of students taking advanced mathematics at high school dropped by 27% between 1995 and 2007.
- **Insufficient funds for research and development:** Algebra, algebraic topology, and general/geometric topology will vanish. Algebraic K-theory and general/geometric topology (VU Amsterdam April 27, 2011)
- **Lake of inspiration** by problems of real world.
- The position of mathematics, as that of any science, is at bottom determined by the development and the position of the forces of production, of technology and economy.

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- **Poor and weak teacher** ignorant of importance and relevance of mathematics. 26% of full time mathematics teacher in UK have no proper education in Mathematics (Education Studies in Mathematics, 56 pp 343-356, 2004 Kluwer Academic Publisher).
- In early 60's, due to so considered **difficult mathematics** courses and lack of trained manpower for each one, mathematical ideologues in a number of countries began to carelessly destroy established schemes of phased teaching of mathematics and entered the age of biology, which cannot replace mathematicians and theoretical physicists.
- **Non-mathematics departments** such as Engineering, Economics and Business, ICT etc. prefer that their own staff member should teach mathematics rather than asking the relevant mathematics department to delegate mathematicians to teach. There are always positive, negative arguments but consequently, many mathematics departments are in crises.

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- Unfortunately mathematics is usually applied by engineers and/or industrial scientists, and not by mathematicians. In other words, mathematicians even applied mathematicians do not apply mathematics; the engineers or scientists do it. Their invented tools are utilized and enjoyed by others. In consequence, mathematicians are losing inspiration by problems of the real world, living in their own imaginary world.
- Mathematicians especially people in pure mathematics ignore the applied science, industries, financial world etc.. Consequently no research fund, no sponsored students for supervision, no consultancy from the real World and some time at a risk of losing job.
- This is a fact that mathematics describes only some aspects of the real world. With the advancement of technology, machines such as computers have become mathematical machines to compete with mathematicians in numerical and symbolic calculations. End result is obvious.

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- Albert Einstein said “**Pure Mathematics** is, in its way, the poetry of logical ideas” but;
- Fail to present its results to a broader scientific and general public

THANK YOU VERY MUCH