

Mathematics is as old as civilization itself and is one of the most useful and fascinating branches of human knowledge. It encompasses many topics of study and as such it is difficult to define the term “mathematics” which comes from a Greek word meaning “inclined to learn”. It may, however, be broadly defined as the scientific study of quantities, including their relationships, operations and measurements expressed by numbers and symbols. In simple words, mathematics deals with study of numbers and their various calculations. The most important skills in mathematics are careful analysis and reasoning, and thus logic is the floor on which the structure of mathematics is built.

### **The Importance of Mathematics:**

Mathematics is used by all individuals in everyday life. In science, mathematics is an essential tool for nearly all scientific studies. Scientists use it in designing experiments, analysing data, expressing precisely their findings by mathematical formulas, and making predictions on the basis of these findings. Such physical sciences as astronomy, chemistry, and physics rely heavily on mathematics. Social sciences, economics, psychology, and sociology also depend greatly on statistics and several other branches of mathematics. Economists (notably econometricians) use computers to create mathematical models (or econometric models) of the economic systems.

### **Skills and Personal Qualities:**

Mathematicians use mathematical theory, computational techniques, algorithms and the latest computer technology to solve economic, scientific, engineering, physics, and business problems. Professionals are often a part of an interdisciplinary team that may include economists, engineers, computer scientists, physicists and technicians. Deadlines, overtime work, special requests for information or analysis, and prolonged travel to attend seminars or conferences may be part of their job.

### **Employment outlook and opportunities as Maths Professionals:**

**Operations Research Analysts:** Operations research has been defined as an interdisciplinary branch of applied mathematics and formal science that uses advanced analytical methods such as mathematical modeling, statistical analysis, and mathematical optimization to arrive at optimal or near-optimal solutions to complex decision-making problems. Operations research analysts formulate and apply mathematical modeling methods to develop and interpret information that assists management with policy formulation and other managerial functions. They help managers to make better decisions and solve problems. If you're planning to take this profession be sure you have a thorough knowledge of strong quantitative and computer skills: an advanced knowledge in mathematics.

**Mathematician:** A mathematician is a person whose primary area of study or research is mathematics. Mathematicians are concerned with particular problems related to logic, space, transformations, numbers and more general ideas which encompass these concepts. They do research, come up with problems and solutions, etc.

**Banking:** You could work in any one of the following areas in Banking – accountant, customer service, front desk, cash handling, account opening, current account, savings account, mortgage loan underwriter, loan processing officer, backend operations, product marketing and sales executive, recovery officer, retail asset manager, property appraiser and customer service executive. As banks provide loans for setting up business and for various development work and thereby generate thousands of jobs and career opportunities in the banking finance sector.

**Teachers:** If you have an affinity for numbers, you can pursue a career in teaching. A math teacher is always on demand as this is considered one of the main subjects throughout schooling. It is a highly paid job in India as many maths teachers provide coaching or tuition to students. Mathematicians who work in academia usually have a mix of teaching and research responsibilities.

**Jobs directly related to your degree include:**

Actuarial analyst

Data analyst

Data scientist

Investment analyst

Research scientist (maths)

Secondary school teacher

Statistician