

Math Careers: In Demand Mathematics Career Paths for 2018

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For those who have a head for figures, pursuing a job related to mathematics is a choice that can add up to a rewarding and lucrative career. Whether they are using math to solve business problems or help an individual make investments that will fund their retirement nest egg, students who love math can use their degrees in a number of ways after graduation. This guide gives information about several mathematics careers, including what these jobs entail, their growth and earning potential, and the skills needed to be successful.

Career Paths in Mathematics

The demand for mathematics experts has grown exponentially in a number of careers—and so has the interest in these jobs. According to the Mathematical Association of America, math professions are becoming increasingly attractive. In fact, mathematician, actuary, and statistician jobs are among the most promising career paths based on their income levels, growth outlook, and low-stress work environments.

In this section, different math careers are explored to illustrate what makes these careers so rewarding.

Popular Programs

Sponsored

- programs & curriculum

- career opportunities
- tuition & financial aid
- admissions & starting dates

1. [Southern New Hampshire University](#)

1. [BA - Mathematics](#)

2. [Purdue University Global](#)

1. [Undergraduate BS - Early Childhood](#)

3. [Walden University](#)

1. [BS in Early Childhood Studies\(Non-Licensure\)](#)

Actuaries

What are the chances of being killed in a car accident? What is the cost of treating cancer patients on a yearly basis? When companies need numbers crunched to determine the probability of events like death, sickness, accidents, natural disasters, and retirement in order to predict risk, they turn to actuaries for this data. Specific job duties of actuaries include compiling and analyzing statistical data, creating strategies that minimize risk, drafting reports that outline the implications of their research, and explaining study results to the stakeholders of the research.



Education requirements

Bachelor's degree.

Computer and Information Research Scientists

When there is a business challenge that needs to be addressed, computer and information research scientists invent a technological way to do it. People in these jobs conduct research on complicated issues and use their expertise to create solutions that are used in business, health care, and scientific settings. Work duties include creating computing languages and tools, helping engineers with their computing problems, and conducting studies and publishing the results.



Education requirements

Doctoral degree. Some entry-level jobs in the federal government may hire workers with a bachelor's degree.

Economists

The work of economists can be seen in several different areas, from education to health care to the environment. As experts in the production and distribution of goods and services, economists study the problems in the economy and craft proposals on how to solve them. This work includes researching economic issues, using mathematical and statistical techniques to analyze financial data, and providing advice to organizations. In addition, these professionals contribute to the knowledge of the field by publishing articles in industry journals.



Education requirements

Master's degree or Ph.D. Some entry-level positions may be open to those with a bachelor's degree.

Financial Analysts

When companies and individuals need to make investment decisions, they factor in the expertise of financial analysts. These professionals are charged with being knowledgeable about trends in the markets and the performance potential of different kinds of investments in order to help their clients make sound choices. The specific job duties of this profession include making recommendations about financial portfolios, studying financial statements, and writing reports for clients about the status of their accounts.



Education requirements

Bachelor's degree. Advanced positions may require a master's degree.

Mathematicians

Mathematicians use their analysis of facts and figures to find solutions to business problems. This position entails developing statistical models that are used to analyze data, interpreting mathematical information to make business decisions, and writing reports that explain calculations and how conclusions were reached. In addition, it's important for these professionals to keep up with the latest mathematical research, so they read professional journals, attend trade conferences, and discuss industry trends with colleagues.



Education requirements

Master's degree. In some cases, bachelor's graduates may be able to get employment, however.

Operations Research Analysts

Operations research analysts use data to help organizations make decisions, create policies, and solve problems. Specific job duties include identifying the specific business problems that an organization needs to solve, collecting information from both human and technological sources, examining data to determine how a challenge can be addressed, and creating simulations that show how a solution will look in practice.



Education requirements

Bachelor's degree for some entry-level positions. In most cases, a master's degree is required.

Postsecondary Teachers

Mathematics, statistics, economics, and computer science teachers alike have the ability to inspire college students and get them excited about math careers. These teachers create a curriculum, as well as assignments and tests, designed to educate students on the class topic and challenge them to get the most out of the course. They also conduct research in their field and publish the findings in industry journals.



Education requirements

Doctorate. Some schools will hire graduates with a master's degree.

Statisticians

These professionals use statistical analyses to solve business, science, and engineering problems, among others. Their duties include developing statistical theories in response to a business challenge; evaluating the appropriate data points to consider; creating experiments, polls, and surveys to gather information; and analyzing data and coming to conclusions. In addition, statisticians create reports that explain their research processes and the conclusions they made.



Education requirements

Master's degree in most cases. Research positions require a Ph.D., while some entry-level applicants can get hired with a bachelor's degree.

Mathematics Salaries

STEM professionals are often well-compensated, and the following careers are no exception. The table below gives examples of the salaries that mathematics professionals can make, based on information collected by the U.S. Bureau of Labor Statistics.



\$108,360 **Computer and Information Research Scientists**



\$103,720 **Mathematicians**



\$95,710 **Economists**



\$96,700 **Actuaries**



\$79,990 **Statisticians**

Components of a Successful Mathematics Career: Skills, Tools, and Technology

Skills

Given the amount and importance of data that is used in mathematics careers, workers in these fields must be highly skilled—and not only in performing calculations. The following are some skills that employees need to multiply their chances of success.

Active learning skills

Those who work in math-related jobs are required to take in a lot of complex information in order to create theories, find solutions, and provide guidance. This requires active learning skills, which allow them to stay informed about the data and issues that impact their industries.

Communication skills

Although handling numbers is a huge part of mathematics careers, on a day-to-day basis, professionals must know how to handle people. As a

result, verbal and written communication skills are critical. Whether they are communicating with their peers or with lay people, math professionals must know how to craft written or verbal messages in a way that a specific audience can understand.

Decision making skills

Workers are often responsible for making judgment calls that affect their clients. People rely on their expertise and their ability to understand complex information, so they need strong decision making skills that allow them to act as trustworthy advocates on behalf of their clients.

Systems analysis skills

This skill entails figuring out how systems work and change, given the conditions of their environment. This can help professionals understand how the fast-changing worlds of science, technology, and finance can influence the work they're doing and the organizations or individuals they're trying to help.

Teamwork skills

Although some may erroneously have the image of a lone scientist working in an office without another person in sight, mathematics careers actually require a great deal of collaboration. In order to find solutions to technological and mathematical problems, these workers must be able to effectively work as a member of a team, always keeping in mind the bigger picture and how their work affects those around them.

In some cases, mathematics professionals need to earn a specific credential in order to get a job. Other times, certifications are earned voluntarily as a way to facilitate career advancement. The following are examples of both mandatory and voluntary credentials that are earned in these occupations.

- In order to get full professional status, actuaries must complete a graduated certification process: First they earn an associate certification and then they move on to the fellowship credential

Professionals who work in the property and casualty field are certified by the Casualty Actuarial Society (CAS), while insurance professionals get credentials through the Society of Actuaries (SOA).

- Financial analysts are licensed through the Financial Industry Regulatory Authority (FINRA). In order to receive a license, the applicant must have employer sponsorship.
- Financial analysts can also receive the voluntary Chartered Financial Analyst (CFA) certification that is offered from the CFA Institute.
- The American Board for Certification of Teacher Excellence offers a mathematics certification for teachers who want to demonstrate their knowledge and skills.

Tools and Technology

Tools and technologies are essential in mathematics careers to ensure accuracy and efficiency. The following are some examples of the instruments these professionals rely on.

- Accounting software, such as JD Edwards software, Fund accounting software, Sage 50 Accounting, and Intuit QuickBooks
- Analytical or scientific software, including programs such as Minitab software, SPSS Amos, UNISTAT Statistical Package, Wolfram Research Mathematica, and Cytel StatXact
- Compliance testing software
- Data scanners
- Graphing calculators
- High capacity removable media drives
- Map creation software, like Microsoft MapPoint, ESRI ArcView, and ESRI ArcGIS software
- Optical disk drives
- Project management software, such as Microsoft Project and Microsoft SharePoint software
- Tableau software

Mathematics Career Job Growth, Prospects, and Outlook

The outlook for mathematical careers depends on where people are

Bureau of Labor Statistics, shows the growth of several careers in math:

Mathematicians

Mathematicians will be needed to analyze the increasing amounts of digital data that companies generate online and on mobile devices.

growth between 2012 and 2022: 23%

Actuaries

These professionals will see growth as insurance companies evaluate the effects of new health care legislation that has resulted in more customers and changes in coverage. Also, companies in other sectors will hire more actuaries to manage and avoid risk.

growth between 2012 and 2022: 26%

Operations Research Analysts

Technological advances are driving the increase of this profession.

growth between 2012 and 2022: 27%

Statisticians

Growth in this industry is tied to the increased use of statistical analyses to make business, policy, and health care decisions.

growth between 2012 and 2022: 27%

Postsecondary Teachers

Growth is tied to increased college enrollments.

growth between 2012 and 2022: 19%

Financial Analysts

Growing investment opportunities coupled with increased complexity of investment portfolios will create a demand for financial analysts.

growth between 2012 and 2022: 16%

Computer and Information Research Scientists

As businesses amass larger amounts of data, this profession will expand. With increased data mining, workers will be needed to manage

this information.

growth between 2012 and 2022: 15%

Economists

Competition in the global economy and complex laws will result in a demand in this career.

growth between 2012 and 2022: 14%

What Do Related Occupations Make?

Occupations that are related to mathematics are also commanding healthy salaries. The following list gives examples of these careers and the range of earnings workers make.

Related Occupations: What You Need to Know

The potential career options for those who study mathematics are as vast as the discipline itself. The table below illustrates some related occupations, the education and training needed to land them, and their growth and salary potential.

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