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## 28 Jobs for Math Majors That Offer Awesome Opportunities

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Think jobs for math majors are only about crunching numbers in an ivory tower? Think again. Your degree can open the door to a huge range of amazing careers. After all, math is involved in just about every job in some way, and it's particularly essential in the in-demand fields of science, technology, and engineering. If you have a solid grasp of math, jobs in many areas become more available to you.

Math majors tend to have well-developed skills in logical thinking and problem solving. They are experts at analyzing data and creating models to extract meaningful conclusions. They can identify patterns and use quantitative data to construct solutions. That's why the kind of jobs you can get with a math degree are so diverse. You could pursue careers in areas like insurance, banking, education, logistics, and more.

We've assembled a list of entry-level jobs for math grads with a bachelor's degree as well as a few jobs that require more advanced training. This list is meant to inspire your career exploration, but don't

think you're limited to these suggestions. Many jobs that don't specifically mention math degrees are available to graduates with these skills, so don't sell yourself short. You likely have more options than you realize.

Read on to discover what majoring in math can do for you!

- [What jobs involve math?](#)
- [3 reasons to study math](#)
- [22 entry-level jobs for math majors with a bachelor's](#)
- [6 math jobs that require an advanced degree](#)

## What Jobs Involve Math?

Almost every job involves math to some extent, though the type of math used in jobs can vary from basic addition and subtraction to complex algebra and inferential statistics. Consider these findings from a study of American workers:<sup>1</sup>

- 94 percent of all workers use some sort of math in their jobs.
- 68 percent use fractions, decimals, and percentages.
- More than a third of skilled blue-collar workers such as carpenters and mechanics use basic algebra on the job; 29 percent use geometry and trigonometry.
- 5 percent of all workers use calculus; skilled trades workers, managers, and technical professionals use it the most.

Math skills are clearly important in many careers, most notably the science, technology, and engineering professions. But such skills also feature prominently in some careers that may not seem like a natural end point for someone with a math degree. [Video game developer](#) and [computer animator](#) are just two examples of less-obvious jobs that actually use calculus, for instance.

A major in mathematics is a springboard to a wide range of rewarding careers. Whether you focus on theoretical mathematics or applied math, the analytical and quantitative skills you develop in a math program are valuable assets that many employers need. Take a look at some of the types of organizations that hire math majors:

- Government agencies and academic research institutes
- Engineering firms
- Biomedical and health services companies
- Insurance agencies
- Real estate firms
- Medical device manufacturers
- Airlines and other transportation service providers
- Financial institutions

### 3 Reasons to Study Math



Do you enjoy the challenge of searching out patterns and solving puzzles? Mathematics is a multi-faceted subject that emphasizes logic and encourages innovation. The ability to apply mathematical concepts and principles can be useful in virtually any industry. Here are three key reasons to study math:

#### 1. Math can be used to solve real-world problems.

Problem solving is the essence of any career in math. The Society for Industrial and Applied Mathematics notes that studying math can prepare you to deal with questions like the following:<sup>2</sup>

- How can transportation providers design their schedules to minimize downtime and reduce maintenance costs?
- Can ethanol realistically replace fossil fuels?
- How might an uncontained epidemic of disease spread throughout the world's population?
- How do variables like weather and tree type affect the spread of a forest fire?

- How can investments be arranged for minimum risk with maximum reward?

## **2. Math majors have some of the highest levels of job satisfaction.**

A math education can lead to some of the most rewarding and satisfying careers out there. In a 2016 study that ranked 200 careers based on job environment, income, outlook, and stress, four of the top 10 jobs were directly related to math: data scientist (#1), statistician (#2), mathematician (#6), and actuary (#10).<sup>3</sup>

## **3. Math provides a solid foundation for advanced studies in other fields.**

Even if you see yourself pursuing a professional career in another field, it could be worth your while to start by studying math. Candidates with an undergraduate degree in math are often looked upon favorably by programs in law, medicine, business, and engineering because math majors tend to have the analytical and problem-solving skills that allow them to excel in those areas. In fact, one study found that, on average, math grads performed better on both the Law School Admission Test (LSAT) and Graduate Management Admission Test (GMAT) than test takers from 13 other disciplines.<sup>4</sup>

## **Entry-Level Jobs for Math Majors With a Bachelor's**

The mental patience and intellectual discipline that come from studying math can lead to rewarding opportunities in a wide range of fields. Jobs for math majors right out of college can be found in areas like insurance, finance, [marketing](#), and [information technology](#). Many of these entry-level positions even come with fairly high salaries. When you complete an undergraduate math degree, jobs like the following become possibilities for you:

### **1. Cryptographer**

Making and breaking codes and coming up with more effective ways to keep sensitive data safe from malicious hackers makes this one of the best jobs for math majors with no experience. And it's not just intelligence agencies that hire cryptographers: You could focus on encoding signals for cable companies or encrypting transactions for financial institutions. You can get started in this career right after graduation, particularly if your coursework includes some [computer science](#) classes.

- Median salary—\$116,476<sup>5</sup>
- Top salary—\$145,274 or more

## 2. Mathematician

This is the most obvious of all math major jobs. A mathematician is someone who enjoys solving problems through numerical analysis. And people who do this kind of work are in demand: Employment in this field is expected to grow 33 percent between 2016 and 2026.<sup>6</sup> You might find yourself researching new theories and concepts, developing mathematical models, or analyzing data to solve business problems. Most mathematician positions call for an advanced degree, but federal government jobs can be obtained with a bachelor's.

- Median salary—\$103,010<sup>7</sup>
- Top salary—\$161,900 or more

## 3. Economist

Economists study market data and use mathematical models and statistical analysis to understand and explain economic trends. Some work for think tanks, where they focus on research. Others monitor market conditions to help corporations maximize their profits. Many economists work for various levels of government, examining issues related to employment, taxes, and interest rates. Many of the entry-level positions in government agencies are available to those with a bachelor's degree in math, though you'll likely need more advanced training to work in the private sector.

- Top salary—\$172,580 or more

## 4. Actuary

The actuarial field is one of the most common industries in which math grads find work. Actuaries use their extensive knowledge of mathematics and statistics to calculate and manage risks for insurance companies. Their job is to figure out how likely it is that an event will occur, how expensive the event would be, and how policies can be developed to minimize the risk of that event. Taking courses in finance and [computer science](#) as part of your math degree can be helpful; it's also a good idea to begin the actuarial certification process while you're still in college.

- Median salary—\$101,560<sup>7</sup>
- Top salary—\$184,770 or more

## 5. [Financial planner](#)



Helping people manage their investments and meet their financial goals is a rewarding way to put your mathematical know-how into action. You might help people set up a college fund or structure their investments for retirement. Solid communication skills are essential in this field; you have to be able to establish trust with your clients. Once you have at least three years of work experience, you can start the process of becoming a Certified Financial Planner, which can enhance your employability.

- Median salary—\$90,640<sup>7</sup>
- Top salary—\$208,000 or more

## 6. Investment analyst

Does following the ups and downs of the financial markets give you a thrill? Investment analysts study economic trends and assess investment opportunities for banks, securities organizations, and insurance firms. To be successful in this field, you must be able to calculate the value of different investments and communicate your findings in written reports. A bachelor's in math will get you in the door; you may also need to pursue licensing from the Financial Industry Regulatory Authority (FINRA).

- Median salary—\$84,300<sup>7</sup>
- Top salary—\$165,580 or more

## 7. Statistician

Broadly speaking, statisticians gather and analyze data to identify trends and solve problems. This role involves coming up with the best methods for collecting data (which could include phone surveys, online questionnaires, or experiments) and drawing conclusions based on the results. You could work for government agencies, research institutes, insurance firms, pharmaceutical companies, or even sports organizations. A master's degree is normally the minimum requirement, but some entry-level jobs are available with a bachelor's.

- Median salary—\$84,060<sup>7</sup>
- Top salary—\$133,720 or more

## 8. Operations research analyst

Analytical skills are crucial to the work of operations research analysts. They apply statistical analysis to business functions and use mathematical modeling techniques to figure out how an organization can operate more efficiently. You could help airlines develop flight schedules or help computer makers optimize their manufacturing processes. You may need to get special security clearance for some positions.

- Top salary—\$134,470 or more

## 9. Systems engineer

Some electronics and communications companies hire math majors (particularly those who come from programs that include a heavy dose of [computer science](#) courses) as entry-level systems engineers. Data analysis and problem-solving skills are key to this job, and you have to be comfortable learning new technologies. It's also a good idea to get as much internship experience in [electronics technology](#) as possible.

- Median salary—\$78,719<sup>8</sup>
- Top salary—\$121,637 or more

## 10. Inventory control specialist

Manufacturing and merchandising companies rely on inventory control specialists to maintain a balance between having enough stock on hand to meet orders and having too much stock taking up space in the warehouse. Your job is to use your analytical skills to develop policies and procedures that keep inventory levels at appropriate levels. Most positions, particularly at large companies, require a bachelor's degree.

- Median salary—\$74,590 for all logisticians<sup>7</sup>
- Top salary—\$120,120 or more

## 11. Budget analyst

When government departments, research firms, or academic institutions need to decide how to allocate funding among different programs, they turn to budget analysts. These professionals analyze the costs attached to various budget proposals and determine their potential impact on an organization's overall financial status. Then, they make funding recommendations based on their findings. Most employers look for candidates with a bachelor's degree, but some require a master's.

- Top salary—\$113,740 or more

## 12. Accountant

Balancing an organization's books and keeping financial records up to date are responsibilities of accountants. They're in charge of calculating payroll, preparing tax returns, and ensuring that the company complies with all financial rules and regulations. Math training can help you get your foot in the door, especially if you land an internship with an accounting firm. Becoming a Certified Public Accountant (CPA) can be a big boost for your career.

- Median salary—\$69,350<sup>7</sup>
- Top salary—\$122,220 or more

## 13. Insurance underwriter

Before an insurance company will agree to insure a home, car, person, or business, it will call on an underwriter to assess the risks involved. Underwriters use their knowledge of probability and statistics to evaluate the risk involved in providing insurance coverage to a particular client and determine the appropriate amount to charge for premiums. Many companies expect beginning underwriters to seek certification once they're hired.

- Median salary—\$69,760<sup>7</sup>
- Top salary—\$123,660 or more

## 14. Programmer analyst

A bachelor's degree in math can get you an entry-level position as a programmer analyst at some technology companies. This role could involve writing specifications for software applications, designing database queries, or developing testing and debugging procedures. You might also be responsible for customizing a piece of software to meet the specific needs of your company or client. Being familiar with a range of programming languages and operating systems will serve you well in this field.

- Median salary—\$65,113<sup>8</sup>
- Top salary—\$95,174 or more

## 15. Purchasing agent

As a purchasing agent, your main role is to buy products for stores to resell. The idea is to find the optimum balance between cost and quality. To make sure your employer gets the best possible deal, you must analyze market conditions, study price proposals, evaluate vendors, and negotiate contracts. A degree in math is good training for this field. A variety of certifications are available once you have a bit of work experience.

- Median salary—\$62,120<sup>7</sup>
- Top salary—\$103,480 or more

## 16. Market researcher

What products should companies sell, and how can they promote them? These are the kinds of questions that market researchers strive to answer. They use their skills in statistical analysis to figure out what products people want to buy and how much they are willing to pay for them. The data they collect helps companies develop products, establish price points, and design [marketing](#) campaigns. This is a hot field, with much-faster-than-average growth expected between 2016 and 2026.<sup>6</sup>

- Median salary—\$63,230<sup>7</sup>
- Top salary—\$122,770 or more

## 17. Cost estimator



Construction firms and manufacturing companies turn to cost estimators to figure out how much a potential project will cost, how long it will take to finish, and what sorts of resources it will require. In this job, you could study blueprints or talk with architects, engineers, and other contractors to gather the production data you need for your estimates. You might also be expected to recommend ways to keep costs down.

- Median salary—\$63,110<sup>7</sup>
- Top salary—\$106,010 or more

## 18. Fraud investigator

You need an analytical mind and excellent attention to detail to succeed as a fraud investigator. These professionals are concerned with cases of identity theft, credit card scams, and insurance fraud. Their job is to review and analyze data in order to figure out if someone has been deceitful for the purpose of reaping a financial reward. You can expect to undergo a background check as part of the application process; some states also require fraud examiners to be licensed.

- Median salary—\$59,051<sup>8</sup>
- Top salary—\$83,928 or more

## 19. Energy analyst

How much electricity will households in your area use over the course of a winter? How much should a utility charge residential or

commercial customers for the power they use? Energy analysts apply advanced statistical techniques to historical usage patterns. They identify trends in the electricity market and develop load forecasts. Many employers look for candidates with a bachelor's degree in mathematics or statistics.

- Median salary—\$58,224<sup>8</sup>
- Top salary—\$82,957 or more

## 20. High school math teacher

If you enjoy the challenge of making math understandable to students of different ages and abilities, you might be cut out for a career as a high school math teacher. You could help young learners master the concepts involved in algebra, geometry, and calculus. All public school teachers must be licensed, but some states allow people who already have a bachelor's degree in another area to take a fast track to certification and begin teaching immediately.

- Median salary—\$59,170<sup>7</sup>
- Top salary—\$95,380 or more

## 21. Data analyst

Sometimes referred to as junior data scientists, data analysts specialize in collecting, processing, and verifying data. They apply standard statistical techniques to complex sets of data in order to identify trends and insights that can help companies solve problems or make better business decisions. Data analysts are in demand in many industries, from sales and [marketing](#) to insurance and [health care](#). A bachelor's degree in math is excellent preparation for this kind of work.

- Median salary—\$57,261<sup>8</sup>
- Top salary—\$77,287 or more

## 22. Software tester

Assessing a computer application to make sure it meets requirements is

and user experience issues requires the sort of analytical thinking that math majors often excel at. It's important to understand the [software development](#) process and be comfortable with a variety of testing tools. You also need to be very detail-oriented and ready to go to bat for the user. Certifications are a big plus in this field.

- Median salary—\$55,678<sup>8</sup>
- Top salary—\$88,891 or more

## Math Jobs That Require an Advanced Degree

If you're thinking about taking your math education one step further by going to graduate school, you're in good company: According to one study, roughly half of those who complete a bachelor's degree in math go on to get an advanced degree in the field.<sup>9</sup> Here are some possible jobs with a math degree at the graduate level:

### 1. Algorithms engineer

It takes a solid understanding of both math and technology to succeed as an algorithms engineer. These professionals develop the detailed step-by-step sets of instructions that tell a computer how to operate and what to do. You could design algorithms for anything from biometric fingerprint recognition to automated driving applications. Most positions require a master's degree in mathematics or [computer science](#); a thorough understanding of different programming languages is also helpful.

- Average salary—\$140,000<sup>8</sup>

### 2. Geodesist

Geodesists use applied mathematics to precisely measure things like distances between the earth and other planets, changes in the earth's gravitational pull, and movements in the earth's crust. Their measurements are so precise that they can accurately calculate the distance between any two points on earth to within a millimeter. Their

earth. An advanced degree in math is a good starting point; coursework in physics, cartography, or earth sciences is also valuable.

- Median salary—\$118,578 for geodesists who work for the federal government<sup>10</sup>
- Top salary—\$134,776

### **3. Meteorologist**

Predicting the weather draws on skills from a number of areas, including calculus and physics. Meteorologists use advanced modeling techniques to forecast atmospheric conditions. Many of them work for agencies like the National Oceanic and Atmospheric Administration (NOAA) or the National Center for Atmospheric Research, but opportunities are also available with airlines, consulting firms, and agricultural companies. You'll need graduate-level training for research positions; a bachelor's in math plus a master's in meteorology is one possible route.

- Median salary—\$92,070 for all atmospheric and space scientists<sup>7</sup>
- Top salary—\$138,250 or more

### **4. Data scientist**

Like data analysts, data scientists are focused on extracting useful insights from complex data. However, while data analysts examine data using existing tools and systems, data scientists can develop new tools and algorithms to solve business problems. This is one of the best jobs for math majors with advanced quantitative skills: Data scientist topped the list of satisfying careers in a 2016 survey.<sup>3</sup> Most positions call for at least a master's degree in math and statistics; some employers look for candidates with a PhD.

- Median salary—\$91,648<sup>8</sup>
- Top salary—\$128,011 or more

### **5. Mathematical modeler**

Use your mathematical mastery to create computer simulations that investigate processes, project results, or predict future behavior. Mathematical modelers can work in areas ranging from [animation](#) and [video game design](#) to aerospace engineering or biological research. You'll need at least a master's degree in applied mathematics to do this kind of work.

- Median salary—\$83,553<sup>8</sup>
- Top salary—\$130,169 or more

## 6. Quantitative financial analyst

Also known simply as "quants," these professionals develop sophisticated models that help financial companies price securities, reduce risks, and boost profits. To do this job effectively, you have to be prepared to question assumptions and drill deep into data. Some, but not all, positions involve computer coding. Finance courses can be helpful, but it's far more important to have graduate-level training in calculus, linear algebra, statistics, and probability.

- Median salary—\$83,289<sup>8</sup>
- Top salary—\$151,487 or more

## Shape Your Future

It's clear that jobs for math majors are abundantly available across a wide range of industries. Are you ready to take the first step toward a rewarding and satisfying career? The job-focused training offered by vocational colleges, technical institutes, and trade schools can help you develop the skills you need to succeed in a huge range of occupations. Enter your zip code into the following search tool to discover convenient programs in your area!

<sup>1</sup> *Journal of Labor Market Research*, "[What Do People Do At Work? A Profile of U.S. Jobs From the Survey of Workplace Skills, Technology, and Management Practices \(STAMP\)](#)," website last visited on July 23,

<sup>2</sup> Society for Industrial and Applied Mathematics, [\*Careers in Applied Mathematics: Alternatives to Academia for STEM Majors\*](#), website last visited on September 8, 2017.

<sup>3</sup> CareerCast, "[Jobs Rated Report 2016: Ranking 200 Jobs](#)," website last visited on May 14, 2018.

<sup>4</sup> Duke University, "[Why Study Math?](#)," website last visited on September 8, 2017.

<sup>5</sup> [SalaryExpert](#), website last visited on September 7, 2017.

<sup>6</sup> Bureau of Labor Statistics, U.S. Department of Labor, [\*Occupational Outlook Handbook\*](#), website last visited on January 12, 2018.

<sup>7</sup> Bureau of Labor Statistics, U.S. Department of Labor, [Occupational Employment Statistics](#), website last visited on June 27, 2018.

<sup>8</sup> [PayScale](#), website last visited on October 3 2017.

<sup>9</sup> Georgetown University, Center on Education and the Workforce, [\*The Economic Value of College Majors\*](#), website last visited on September 8, 2017.

<sup>10</sup> Federalpay.org, "[Pay Rates for Geodesist](#)," website last visited on September 11, 2017.