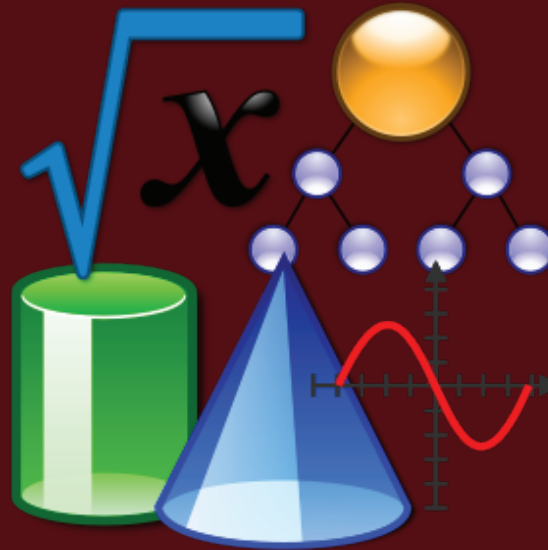


Five simple steps to succeed in Math, Statistics and AI algorithms



- ☑ **Math** to learn more about our Math classes
- ☑ **STATS** to learn more about our Statistics and Business courses
- ☑ **AI** to learn more about building AI algorithms

Step 1:

Why do I need to learn Math or Stats?

The question "Why do I need to learn math?" often arises, and the answer can vary depending on your stage of education and goals.

For a middle school or senior year high-school student, the answer may seem clear-cut. You're on the brink of graduation and have your sights set on admission to a local college's medical program. You recognize the necessity of excelling in pre-algebra, aiming for an A or B grade. You're diligently preparing for your final test, ensuring your graduation with a high school diploma.

Similarly, if you're a senior year undergraduate or a graduate student at the University of XXX in city YYYY, you understand the importance of math for your academic progression. When confronted with the question once more, your response is resolute: "Yes, I do need to learn math or statistics because it's a requirement for my upcoming fall semester graduation."

At every educational level, the relevance of math becomes apparent, serving as a foundational skill set for future academic and career endeavors.



How would your answer be different, if you are a business professional, who stays at your desk all day long trying figure out how to complete any complex task?

The answer to the question is ultimately very different for a professional who attempts to crunch some sophisticated business problems.

What is the difference? Let's take a minute and look closely at the business professional named Joe Smith. Unlike a student simply aiming to graduate, a professional like Joe Smith, who is a financial analytics manager at one of the local Texas banks, he faces daunting challenges. Assigned by his superior, Mark, to automate the Allowance for Loan Loss Reserves (ALLL) model, Joe finds himself in uncharted territory.

The significant portion of the model is Cash Flow projections of installment and revolving banking products. The model was developed and implemented by the Quantitative Analytics Modeling team. The developers are the experts in various computational mathematical techniques related to any forecasts or projections. Joe is getting nervous. The deadlines are tough, and Joe was provided no guidance or supervision from Mark on how to fix the model.

Mark is out of office on vacation and is coming back to office tomorrow. He requested to resolve the issue, to deliver the report and to build the MS Power Point presentation by the end of day tomorrow.

Does this fictional story look familiar for anyone of you who is a financial business professional? The answer is obvious. Absolutely YES!



Imagine the hustle and bustle of daily life, where amidst managing a business or navigating a career, you pause to ponder: "Why do I need to learn math?"

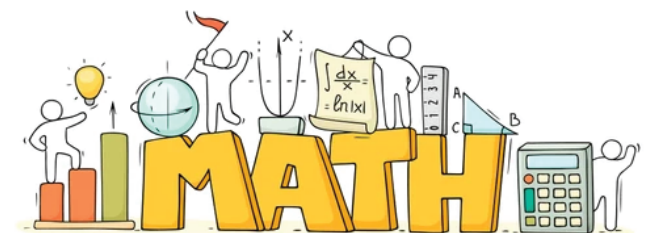
Humans face numerous challenges daily, constantly assessing scenarios, striving for success and happiness. Our lives are a whirlwind of activities, where we juggle countless tasks and confront unexpected issues that appear seemingly out of thin air. We're constantly engaged in strategic planning, running "what if" scenarios, and solving complex problems that demand both strategic and tactical thinking. But why do we do all this? Ultimately, we seek success, financial prosperity, and personal fulfillment.

I often find myself asking: "What does success mean to me?" How can I achieve it? For me, success is defined as a great achievement that rely on employing logic and critical thinking to navigate life's complexities, to nurture relationships, and to seize opportunities. Therefore, the question of why I need to learn math is synonymous with understanding how to thrive in this competitive world. To succeed, I must become a strategic thinker, a planner, and an executor.

In fact, at the heart of all of these skills lies one subject that hones them simultaneously: Mathematics.

indeed, math is crucial! Whether you agree or disagree, let's discuss it further. Often, I hear students complain about math: "I hate these math problems," "I suffer from severe math anxiety," "I'm afraid I'll fail my math class or exam." But fear not! You're not alone, and help is available. Mathematics may seem daunting, but no worries.

We are here to help. This brings us forward to the next step



Step 2:

How can I learn it now, if I never understood or liked Math?

Facing mathematical challenges can be daunting, especially without a firm grasp of the underlying concepts. It's normal to feel overwhelmed or stressed when struggling with math. However, there are steps one can take to ensure better outcomes.

Scenario A: Ana and Joel talk about the upcoming Algebra 2 class. They are undergraduate medical students who have run into each other outside of campus's Starbucks shop. It is Wednesday afternoon of the spring break week.

Ana: Hey Joel, how is your spring break going so far?

Joel: Hi Ana, glad to see you. It is going well. Thank you. I was just coming back after grabbing my coffee. You know, I was reading my Algebra 2 Power Point presentation materials. I am trying to get ready for the mid-term test. Next Monday we are back to school, and if you remember our last class before the spring break, our math instructor said that the Mid-term test will be administered by the end of the next week.

Ana: Boy! Mid-term test? Awe, no. I am still falling behind with my MyLabMath© Homework assignments and quizzes. Hey Joel, I need your help! Would you have a couple of hours later tonight, so we can get together to go through this Mid-term prep?

Joel: Sure, I let's get together and look at your homework and course chapters.

Ana: Thank you

Scenario B: There is a Federal Savings Bank (FSB) XXX located at city YYY. John, Bob and Hannah are three bank employees, co-workers who are having impactful conversation. Their cubicles are located near one another. It is a Monday morning, and the Board meeting is coming up on Friday of the week.

John: Hey guys, how was your weekend?

Bob: Mine was good but too short.

Hannah: Same here. Hey guys, I remember Steve asked last week to prepare the dashboard to complete the Power Point for the upcoming Board meeting.

Author: The action took place in pre- AI era, when ChatGPT, Zero GPT and other AI tools and chat bots as well as any APIs just simply did not exist outside of the developer's heads. Back in times cell phones were also very simple.

Bob: Darn, I am struggling to acquire correct forecasting numbers from our CECI- (current expected credit losses) models. The model generated results are very wrong.

John: Hey guys, we need to go visit with our quants. (Quants stands for quantitative analysts who are the model developers. Today they are data scientists)

Hannah: I will get a meeting room booked.

Author: One hour later.

Sue, Rashid and Oleg are 3 quantitative analysts present during the meeting.

Bob: Oleg, I am struggling to understand and interpret the results of the CECI-implementation for the Installemt Loan portfolio. The results (0/0) of the Probably of default (PD) does not make sense to me, it threw losses off for the Installment Loans book. We would like to begin working on the dashboard for Steve and finish it first draft Wednesday morning.

Oleg: Sure, I will be glad to help. Let me take a double look at the SAS code, I will get back to you shortly.

Rashid: But you guys all are aware that the cash flow was calculated based on the stream-line LIFO method, we have just have to code it in separately because the Installment loan book is taken at the account level. So all PDs, EDS (Exposure at Defaultcomment for the reader) and LGDs (Loss given Default) formulae are directly coded

Sue: We would love to help you guys, but we also are very swamped this week. As quants, we are falling behind in developing the model for traders. We need to move our gears toward the investment portfolios. Traders just hangry to see the application case of the Black Scholes model for the Options. You guys are aware that the Optionality for the bank Vanilla option has been turned back in?

Hannah: Do you guys want to re-convene tomorrow afternoon?
I will book the room, and also, I will begin plugging the numbers to the dashboard now. We have some results that are verified and made sense.

Question to the Reader:

You read two stories. Both stories are true. I inserted these scenarios to the step taken from real life experience. Names, of course, are fictional.

Q1: What are the "common denominators" in the both scenarios?

1. People have analytical, critical thinking, problem-solving and decision-making skills because they are learning MATH

2. Students and banking analytic professionals both have critical thinking skills, they operate in quantitative subject matter areas which is highly mathematical.

2. Both groups are collaborating to resolve the issues and complete the tasks

Q2: What are the challenges that students and business professionals both face?

3. Both groups have been provided with minimum guidance on how to achieve results

4. Both stories demonstrate determination to solve required the problems in the short time period. This brings us to the next step:

Step 3 :

Practice Make it Perfect!

Do you remember the excitement of receiving your first tricycle for your birthday? I sure do. I recall my mother steadying me as I attempted to mount the tricycle and learn how to ride it. Then, around the age of 11 or 12, I was given my very first bicycle. While I was thrilled, learning to ride it proved to be a challenge, resulting in numerous falls and countless bruises. Learning Math is just the same as learning how to ride a bike. You may say, what do you mean, Tania?

Well, Math is a logical subject filled with theorems, axioms, lemmas, proofs, and practical problems. To comprehend any mathematical concept or solve problems effectively, one must first grasp the underlying concept one has to learn a METHOD. 1. Grasp a CONCEPT (you may consider answering the question "WHAT").

2. Learn a METHOD ("HOW" to do it)

3. PRACTICE (Yes, "ride the bike")

Once the understanding is there, the only thing that is left is PRACTICE.

Again: Ride the bike. Once you understand the concept, practice becomes crucial. Just like learning to ride a bike, solving math problems may become progressively difficult, and you may encounter trial of errors and make mistakes, similar to getting bruises when falling off a bicycle. However, there will come a moment, I assure you, when everything clicks, and you're no longer falling off your bike but riding it with ease.

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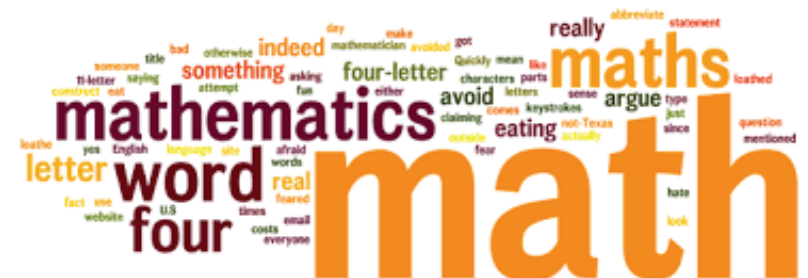
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So, how do we practice solving problems? The oldest and most recommended method is by using your hand. I suggest writing down the problem as well as the solution on a sheet of paper. You can also utilize practice worksheets or seek additional resources online. This brings us to the next step in mastering Math.

Step 4 :

I have just started my journey learning math but am still struggling to understand the concept.

The important advise: DO NOT WORRY, DO NOT PANIC!

First, by deciding to learn math, you've taken a significant step forward. You've recognized that math is essential for honing critical thinking, problem-solving, and decision-making skills,

enabling you to connect dots more easily and strategize effectively. Fantastic! However, if you still find yourself struggling with a math concept, don't fret. You're not alone, and we're here to assist you. This means you're already halfway through this learning journey.

Second. Remember though: here are a few key qualities necessary to succeed in learning mathematics or statistics: time, determination, dedication, resilience, and the ability to tackle challenges head-on.

Perhaps, my question back to you is this. are these same qualities essential for success in any endeavor you pursue?



Step 5:

If these 4 previous steps are just half a mile run, guess what? You are already running a marathon!

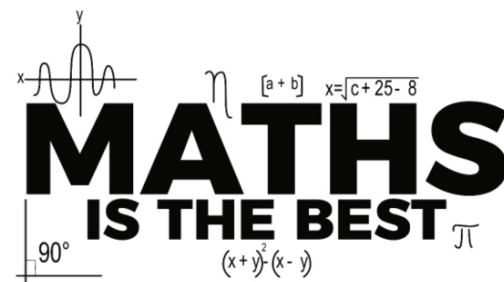
Congratulations on embarking on your math learning journey!

You're already making strides in grasping the concepts, but occasionally, you might find yourself stuck on a problem. Don't hesitate to seek help!

Learning math or statistics is the same as building a house. Without a solid foundation, your structure is vulnerable to being toppled by strong winds or tornadoes. So, what's the solution? Lay that foundation on solid rock and then build stone by stone, brick by brick. Remember, in math, if you miss learning a previous concept, you'll need to go back and re-learn it. Here are our recommendations:

1. Grasp the CONCEPT! Ensure you understand the math or stats concept thoroughly.
2. Learn the Method: Understand how to solve the problem by learning the appropriate method
3. Practice: Practice, practice, practice!
4. If nothing works, please reach out to us!

The Supernova Math Academy is committed to contribute to your academic and life successes. We will help you to master the most valuable skills in the world to be successful.





Thank You

Call US : (210) 428-1062

visit us : www.supernovamathacademy.com