

**IS MATHS A MONSTER ?**



**MATHS GENIUS  
IN JUST 90  
HOURS**

**FOR ANY EXAM**

**By RUDRABHA**

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## **BENEFITS AFTER READING THIS BOOK:**

- **BECOME GENIUS IN MATHS AFTER 90 HOURS TRAINING.**
- **LEARN SMART TECHNIQUES FOR REVISIONS AND MEMORIZATION.**
- **LEARN HOW TO BECOME A HUMAN CALCULATOR**
- **LEARN HOW TO BECOME SUPER HUMAN...& more**

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## **ABOUT THE AUTHOR**



**I am Rudrabha Mukherjee, a neoteric reformist and mathematician-trailblazer, working towards making the seemingly dire and distressing subject of mathematics – Well.... there's no other way to say it.... –**

**EASY! And also restyling it into a trouble-free subject of fun for everyone by innovatively pioneering new-fashioned unorthodox and ground-breaking ways of teaching and comprehending. Having had taught mathematics to students of diverse backgrounds in the past 10 years (I started when I was in standard 6th!). I'm a steadfast believer of teaching students according to their interest and comfort by continuously comprehending their way of absorbing the various nooks and crannies of mathematics and presenting the seemingly gargantuan discipline of Maths through an angle they can ideally grasp it with and can best savor and relish the MOJA (Bengali for the English word 'Fun') of engaging in it.**

**The dream that drives me is to convert as many Maths haters into Maths lovers as I can. I have made worthwhile and fulfilling triumph in my strife to do so too, which has solely worked to fuel my efforts and add to my hunger of reaching out to and aiding as many individuals as possible. I am proud to declare that my students have secured gold medals in various competitive events and also include class/school/foundation coaching/zonal toppers. One thing about me that any of my students or friends know for sure is that for mathematics and education I am always with them. It is my passion and if it drives me to go out of my way to help someone, then that's all well and good!**

**Website: [www.theMathspack.com](http://www.theMathspack.com)**

# **1<sup>st</sup> – HOW TO BECOME MATHS**

## **GENIUS IN JUST 90 HOURS?**

First of all I would like to congratulate you in advance that yes it is **100%** true that if you follow the rules prescribed in this book sincerely you will surely become Maths genius in 90 hours or 45 days ( 2 hours per day ). I have tried to write everything in very simple language so that everyone can understand.

**RULE #1:** Make sure this is not another mathematics assignment book. It is all about your honesty. You will not get additional marks for completing it. But it is my promise that if you follow the rules and methods sincerely you will surely become a Maths genius, human calculator and find Maths the easiest subject just after 90 hours yes. So the first rule is following the rules with honesty.

**RULE #2:** Be scientific. Let me clear this to you in detail. We human have a very basic nature that we follow the facts sincerely for which we have scientific arguments right?

So you have to know that how the brain works and how to take maximum benefits with least effort from it and why anyone is

weak in Maths? (It will be very short promise yay! 😊 ). I know to some people it will be very boring but I can assure you after that everything will become very easy and interesting.

## **WHY ANYONE IS WEAK IN MATHS?**

**1# Shocking news (to some people): Everyone “WAS” good in Maths initially but become poor just because of lack in the proper guidance.**

**2# Lack in practice because Maths is a game of practice.**

**3# Unable to memorize the number tables, basic formulas, squares and square roots e.t.c.**

**4# Do not have love towards Maths also don't know what one can do if he or she is good in Maths. (Lack of motivation).... And many other...**

## **VERY BASIC PRINCIPLES OF MEMORY:-**

**1# REPETATION LEADS TO MEMORIZATION.**

**2# DRINKING WATER IN A PROPER QUANTITY IMPROVES THE MEMORY.**

**3# WE MEMORIZE PICTURIZED THINGS IN BETTER MANNER.**

#### **4# REGULAR EXERCISE, MEDITATION AND PROPER REST IMPROVES THE FUNCTIONING OF BRAIN FOR BETTER MEMORIZATION.**

### **STRATEGIES TO IMPROVE YOUR MATHS GRADE:**

By [www.theMathspack.com](http://www.theMathspack.com)

- ✓ If you don't understand something, focus on mastering that topic before moving on to the next topic.
- ✓ Work example problems and check your answers to gain practice with every lesson.
- ✓ When beginning to work a Math problem, do not "map out a path from problem-to-answer" in your head before writing anything down.
- ✓ When you study and do homework, try to find a quiet place to do it.



- ✓ If someone asks you for help, try to explain the topic to them as best you can.
- ✓ Never, ever work math problems in pen.
- ✓ Try to use a mechanical pencil with separate eraser, if you can.
- ✓ Keep your solutions neat and line-by-line.
- ✓ Don't work problems very late at night.
- ✓ If the problem lends itself to it, draw a picture of the problem.

## **HOW TO USE THIS BOOK? (VERY IMPORTANT TO KNOW IT)**

**(THE 90 HOURS' CALCULATION IS BASED ACCORDING TO 2 HOURS PER DAY FOR 45 DAYS.)**

**So I have broken it in following parts (2 hours per day):**

**1. RULE #3 : MEMORY BANK (30 MINUTES)**

**2. RULE #4 : QUICK RECAP (30 MINUTES)**

**3. RULE #5 : MAIN COURSE (60 MINUTES)**

**TOTAL: 120 MINUTES = 2 HOURS**

In “JOURNEY WITH ME” section you simply have to write everyday status with honesty (remember I am not going to check it and you will not get additional marks for it😊.)

In “EXAMS DECODED” section I will guide you that how should you prepare for each kind of mathematics exam.

(For school exams, S.A.T, Olympiads, J.E.E and Boards e.t.c).

**ALWAYS REMEMBER:-**

**THE MORE YOU SWEAT IN PRACTICE THE LESS YOU WILL BLEED IN WAR.**

### **RULE #3: MEMORY BANK**

**Yes we all are memory bank with infinite GB. (Hehehe...☺)**

**Yes it is true do you know what we are like a pen-drive having lots of memory but filled up with some files having memory in MB.**

**Let be more specific about what I want to say in this particular section I am going to tell you two basic techniques and if you follow it on regular basis you will enhance your memory capacity and perform well in any exam especially in MATHS because it needs your logical approach.**

## **1<sup>ST</sup> TECHNIQUE:**

**Have some warm up exercise for 10 minutes like jogging some physical exercise. SIMPLE ☺**

## **2<sup>ND</sup> TECHNIQUE:**

**Meditate immediately after the exercise for next 20 minutes keeping your eyes closed (close your eyes by handkerchief recommended) and interlock your fingers facing the ceiling and simply sit anywhere comfortably and just observe your breaths don't count it just simply observe it and open your eyes after 20 minutes ( better if you set an alarm for 20 minutes).**

**This technique is very simple yet very powerful you can see a miraculous change in your retention power and memory after 40-45 days guaranteed.**

**“Meditation directly affects the function and structure of the brain, changing it in ways that appear to increase attention span, sharpen focus, and improve memory.”**

### **RULE #4: QUICK RECAP**

**Generally lots of students do mistakes in mathematics questions just because of they forgot or unable to recall the basic formulas, equations, number tables e.t.c**

**So it is very necessary to remember all these things.**

**Very simple technique just write down the number tables from 2 to 20 (sound childish?) but do it anyhow for 15 minutes every day and see the magic then write down the formulas or theorems you used to forgot very easily and revise it for next 15 minutes on daily basis.**

**Sincere Advice:**

**Better to revise any particular chapter using spider web technique in which you can write all the formulas in form of spider web simple😊.**

**Finally a 30 minutes rule which is of 15 minutes for number table for fast calculations and 15 minutes for short recap.**

## **EXAMS DECODED**

**In this section I am going to tell you which books to be followed for particular Maths exam. Then follow the rule #5 MAIN COURSES to have full command over mathematics.**

**FOR SCHOOL EXAMS:**

**Solve your textbooks along with previous year question paper if available before the exam. (Generalized)**

**Solve and supplementary book additional to this.**

**LIKE FOR INDIAN CBSE STUDENTS OF CLASS 6 To 8:**

**1. N.C.E.R.T**

**2. R.D.SHARMA**

**FOR INDIAN STUDENTS OF CLASS 9 & 10:**

**1. N.C.E.R.T**

**2. TOGETHER WITH**

**FOR INDIAN STUDENTS OF CLASS 11 & 12:**

**1. R.S.AGARWAL**

**2. TO THE POINT**

## **FOR INTERNATIONAL MATHEMATICS**

### **OLYMPIADS:**

- **D. Djukic, V. Jankovic, I. Matic, N. Petrovic: The IMO Compendium 1959-2009, Springer, 2011.**
- **M. Becheanu: International Mathematical Olympiads 1959-2000. Problems. Solutions. Results, Academic Distribution Center, Freeland, USA, 2001.**
- **I. Reiman, J. Pataki, A. Stipsitz : International Mathematical Olympiad: 1959–1999, Anthem Press, London, 2002.**
- **I. Cuculescu: International Mathematical Olympiads for Students (in Romanian), Editura Tehnica, Bucharest, 1984.**
- **A.A. Fomin, G.M. Kuznetsova : International Mathematical Olympiads (in Russian), Drofa, Moscow, 1998.**
- **M. Aassila: 300 Defis Mathematiques (in French), Ellipses, Paris, 2001.**
- **M.S. Klamkin: International Mathematical Olympiads 1979–1986, MAA, Washington, D.C., 1988.**
- **S.L. Greitzer : International Mathematical Olympiads 1959-1977, MAA, Washington, D.C., 1978.**



- **V. Jankovic, V. Micic: IX and XIX International Mathematical Olympiads, MS of Serbia, Belgrade, 1997.**
- **M.S. Klamkin : International Mathematical Olympiads 1979–1985 and Forty Supplementary Problems , MAA, Washington, D.C., 1986.**
- **E.A. Morozova, I.S. Petrakov, V.A. Skvortsov : International Mathematical Olympiads (in Russian), Prosveshchenie, Moscow, 1976.**
- **M. Asic et al. : International Mathematical Olympiads (in Serbian) , MS of Serbia, Belgrade, 1986.**
- **V. Jankovic, Z. Kadelburg, P. Mladenovic : International and Balkan Mathematical Olympiads 1984–1995 (in Serbian), MS of Serbia, Belgrade, 1996.**

### **FOR JEE MAINS + ADVANCE EXAMINATION**

**Please solve books in following manner if your base is not so good. (2 YEARS PLAN)**

- 1. R.S. AGARWAL CLASS 11 AND 12.**
- 2. R.D. SHARMA OBJECTIVE FOR COMPETITIONS.**
- 3. PLAY WITH GRAPHS BY AMIT M AGGARWAL.**
- 4. PREVIOUS YEAR JEE MAIN AND JEE ADVANCE ASKED QUESTION PAPER WITH SOLUTIONS.**

## **ONE YEAR PLAN:-**

**Follow all above except book mentioned in first point.**

### **FOR C.B.S.E. CLASS 10<sup>TH</sup> AND 12<sup>TH</sup> BOARD EXAM:**

**1. Class 10: Solve TOGETHER WITH.**

**2. Class 12: Solve TO THE POINT.**

### **FOR SAT PREPARATIONS**

**SAT preparation books are given in the MATHS PACK site**

**visit: [www.theMathspack.com](http://www.theMathspack.com)**

### **RULE #5: MAIN COURSE**

**In this section I am going to tell you that how can you solve the books mentioned in previous section so that you can have 100% confidence in mathematics.**

### **1<sup>ST</sup> TECHNIQUE:**

**USE STOPWATCH.**

**Take a set of 10 or more question on average and you simply have to take a stopwatch before solving any question and make**

sure that you have to solve it in 2 minutes at most (for each question).

What if you are unable to solve it within the given time?

Just encircle it and move ahead simple 😊 also this indicates that there is lacking of confidence in the concept.

Devote 60 minutes daily for this technique.

### 2<sup>ND</sup> TECHNIQUE:

What if you are still in trouble in solving mathematics problems by using the above technique?

Simple 😊 go and ask to your Maths teacher. Yes I do agree some teachers are not motivating and of good nature though in that case you can ask someone else or me at

[www.theMathspack.com](http://www.theMathspack.com) . I am always with you to help in Maths. Just remember one thing clearly that if you are solving problems in this manner on daily basis even in first attempt you are not able to solve at least one question still you will see a magical change in your mathematics solving ability in 90 hours.

😊

**“JOURNEY OF 90 HOURS WITH ME”**

**Let's begin the journey which will change your mathematical life completely. But before starting the journey I would like to mention some noteworthy points.**

- Be honest it is a conversation between you and me (shhh... secret) not at all hehehe...😊. For 100% results you have to follow it sincerely and with honesty.**
- Tick mark the rules you have followed on daily basis.**
- Unpleasant or unexpected circumstances are inevitable so for that gap of only one day is allowed otherwise if have gap of more than one days you have to start it from very beginning. YES 😞 😞 😞**
- Read the following motivational lines on daily basis after completing the daily tasks: (It may be boring but follow it for 100% results)**

**“Take chances, make mistakes. That's how you grow. Pain nourishes your courage. You have to fail in order to practice being brave.”**

**“You are what you practice most.”**

**“Tomorrow’s victory is today’s practice.”**

**LET’S START THE JOURNEY (TAKE PRINT-OUT)**

**TICK (✓) THE RULES YOU HAVE DONE: (DAY-WISE for 45 days)**

1. **RULE #3:**                      **RULE #4:**                      **RULE #5:**

**Reading the lines:**

2. **RULE #3:**                      **RULE #4:**                      **RULE #5:**

**Reading the lines:**

3. **RULE #3:**                      **RULE #4:**                      **RULE #5:**

**Reading the lines:**

4. **RULE #3:**                      **RULE #4:**                      **RULE #5:**

**Reading the lines:**

5. **RULE #3:**                      **RULE #4:**                      **RULE #5:**

**Reading the lines:**

6. **RULE #3:**                      **RULE #4:**                      **RULE #5:**

**Reading the lines:**

7. **RULE #3:**                      **RULE #4:**                      **RULE #5:**

**Reading the lines:**

**8. RULE #3:            RULE #4:            RULE #5:**

**Reading the lines:**

**9. RULE #3:            RULE #4:            RULE #5:**

**Reading the lines:**

**10.    RULE #3:    RULE #4:    RULE #5:    Reading  
the lines:**

**11.    RULE #3:    RULE #4:    RULE #5:    Reading  
the lines:**

**12.    RULE #3:    RULE #4:    RULE #5:    Reading  
the lines:**

**13.    RULE #3:    RULE #4:    RULE #5:    Reading  
the lines:**

**14.    RULE #3:    RULE #4:    RULE #5:    Reading  
the lines:**

**15.    RULE #3:    RULE #4:    RULE #5:    Reading  
the lines:**

**16.    RULE #3:    RULE #4:    RULE #5:    Reading  
the lines:**

17.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
18.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
19.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
20.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
21.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
22.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
23.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
24.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
25.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**

26.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
27.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
28.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
29.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
30.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
31.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
32.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
33.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
34.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**



35.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
36.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
37.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
38.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
39.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
40.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
41.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
42.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**
43.     **RULE #3:**     **RULE #4:**     **RULE #5:**     **Reading**  
         **the lines:**

44.      **RULE #3:**      **RULE #4:**      **RULE #5:**      **Reading**  
the lines:

45.      **RULE #3:**      **RULE #4:**      **RULE #5:**      **Reading**  
the lines:

**CONGRATULATIONS 😊 😊 😊 NOW YOU CAN FACE MATHS  
WITH EASE YAY! JOURNEY STARTS HERE hehehe... 😊 it  
may be painful though but worth doing it. How?**

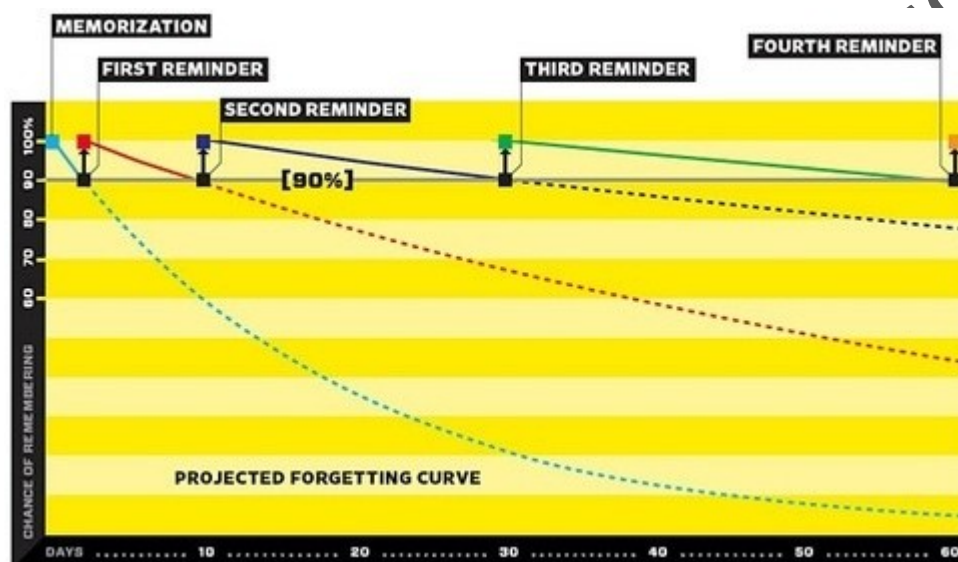
**I am going to share with you that in the next section how  
you will explore yourself with Maths. 😊**

## **BEST STUDY TECHNIQUE FOR ANY EXAM**

There are two important concepts worth sharing before I describe study method. The first concept is about *memory graph* and the second one is about *concentration span*.

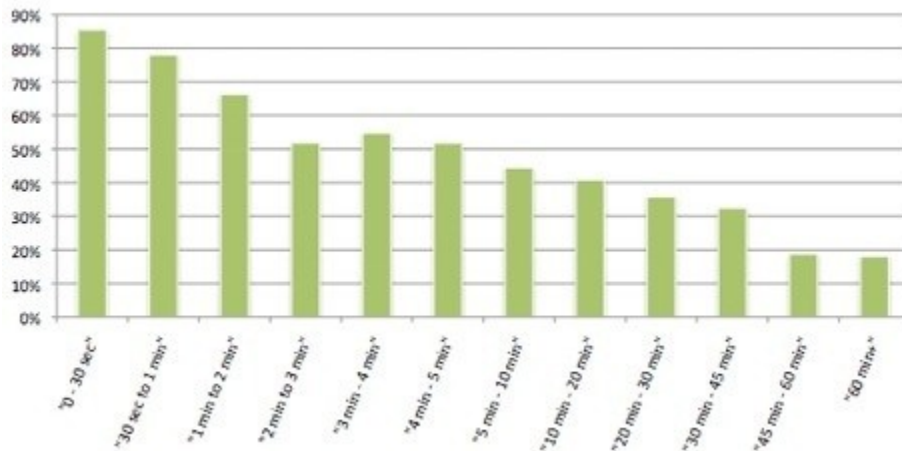
## The Human Memory Graph

The concept is when you read something, your memory of what you read or heard is almost alive. If we represent this with graph it is horizontally at 100%, and it slowly declines over time. When you review it after one day, memory connections are strengthened. Now it's declination is very slow as compared to without review. This speed decreases with every review of the thing you want to remember. It is explained in the graph given below.



Instead of memorizing, try setting a review plan without any tension and be relaxed. Read with concentration, and then leave it. Read again in the evening, then again the next day, and then again the next week. Test yourself on the 15th day, and then review after one month. You'll notice that your memory, of what you heard, read, or listened, will not decline so easy now plus you remember most of it including subtle details related to or within the material.

## The Human Attention Span



As it's clear from this graph, the human attention span is at 30% after 45 minutes. Mostly, that is the length of one class for schools below university level. In universities it is increased to one hour or more. You can improve your attention span by increasing the time slowly, but it is better to take a short break (~5 minutes) after about an hour of focused study. The short break will allow you to regain about 90% of your attention span.

Another important thing regarding memory is reading a topic from many sources. It has two benefits, less boredom and many different aspects of the same scenario. Later one increases latency of information from different areas of mind when required. The more connections your brain makes with the information, the more likely it will stick in your mind.

- Another important consideration is the productive hours. It may be different for few people but mostly early morning is the most productive time.

- Remember to keep the room temperature a little warm. It will help in focusing.

After a lot of study about how to study, I devised a plan, which was refined over time according to the results. Now here is a refined plan, is a refined plan, in which are inherent many researches and experiences I have come across during or after that 2 year study period. I have always been interested in education, human evolution and psychology.

When you want to be confident about some topic or field of study first read about the input and output, end results, its uses, how it works and why you are into it and then dive into.

### Planning and managing your study

1. *Define a Study Schedule*; I scheduled 11 hours for study per day. It is the first step to success. I was studying, and interested in it, so I was giving most of my time to studying. You may schedule less than 11 hours of course, I was in a poor family. I knew that without hard-work, I would not be able to reach the level of success I was striving for. After getting a winning position in exam results I got 100% scholarship in DELHI PUBLIC SCHOOL for class 11 on APRIL 2011.
2. Humans can concentrate for 40 minutes on a subject, or maximum 1 hour. Do change your study material/subject after every 40 minutes or 1 hour. But later on you can increase this time slowly to 2 hours. I did this.
3. Start on your daily schedule by learning new things, learning new things at start gives you hope and makes you motivated.
4. Don't start one subject or module after the other. Take a break of 5 to ten minutes. During your break time eat some chocolate, fruits,

and vitamins. Get out of your seat and get your blood flowing by walking around or doing a few sit-ups, push-ups, or jumping jacks. Even better, step outside to get a breath of fresh air and enjoy nature. This is a right click and refresh for you on your desktop to start another application.

5. Study each subject three times a day, design your schedule such that every subject has 3 shifts per day. Take notes in the first shift, and rehearse them in second shift and so on. Notes taken should not be an exact copy of the book text.
6. Re-allocate time for your modules in your schedule after every (maximum of) two weeks. Or test yourself after one week and review your schedule; focus on areas you need work in based on the results of your self-testing. Test yourself sometime in the middle of a study schedule in a day.
7. Remember to review topics of this day you have studied, at the end of study time table.
8. Second day, start with looking at the topics of the last day. But never do an exam at the start of study time. After you review the previous day's materials, move on to learning new things. Later chapters in books mostly have references from former ones. Increase difficulty slowly from start to end. A basic rule in all of our lives.
9. Do some statistics on important and less important subjects or difficult and easy subjects and divide time with statistics methods. For example by first assigning the difficulty level to each subject like 40% and 60% etc.
10. If studying something which could be easily implemented in home or lab, don't miss it. I, when studying biology, had tried to produce a new family of a tree though it was just a try and nothing

resulted. I have been programming to simulate the physics concepts which helped a lot.

### **Subject specific study techniques**

- 1. For math subjects, try to solve a question, if you fail, just do it with your hands by looking at some help book. After you finish copying by hands, you will infer what was missing. This is called learning with hands not mind. This is because some time an answer tells you about the solution in math.**
- 2. For physics subjects, start with writing the topics equation, prove it on paper same as stated above in (math method), then start with the theory. Attach equation with the topic.**
- 3. For English, write difficult words on the note book. Learn them first.**
- 4. For theory subjects, read a lot on the same topic from different sources, read the topic on book, leave it. Now read it on Wikipedia and leave it. Learn it on some other book. This is easy and very useful method. Don't try to learn from your book only this will bore you and you won't remember well.**

### **Exam Tips**

- 1. End preparing for exams about one week before. Design your exams timetable so that your intense preparation ends about one week before the first day of paper. This will help in**
- 2. Tension free preparation. Inside your heart you know I have one week, as a backup.**
- 3. One week extra preparation. The last EXTRA week is now more valuable than one month. Everything you will do in this week will be extra and very motivational for you.**

4. If there is 2, 3 days break between papers, don't stick with one subject. As mentioned above it kills productive study and focus. Change study module for the sake of attaining mind focus and refreshment, at least.
5. Review your notes the day before paper. This will give you an overview of all topics plus strengthening the memory connections for those topics.
6. After paper is over, don't throw the question paper into dust bin, thinking that it's gone now. It can help your mind settle down. Read and examine how much you did correctly.
7. Keep calculating marks you obtained in each paper and adding to total. It will motivate you, like we do in scoring games.
8. Don't forget the one and only solution for refreshment and energy of mind, the exercise and healthy foods in exams.

### Miscellaneous facts

1. Don't listen to love music or such type of songs. Listen to some good motivational music like "K'NAAN – WAVIN' FLAG" ([Wavin' Flag](#).)
2. Do take some time for spirituality or loneliness, for many reasons it's important.
3. Play some sports or exercise, not too much.
4. Eat different things in daily life and especially in break times.
5. Listen to news for some time. If learning English, listen to BBC.
6. Play with children, they are also learning, observe them and their interest.
7. Do spend some time with family and share your status.
8. If possible, do have some time to teach someone. It will be best, if you can teach what you are learning yourself.



9. For your tasks apart from study, make a to-do list. It's very important to lessen the distraction and burden from your mind.
10. Understanding the problem, half solves it.
11. Imagine your success every day, imagine the future. You are investing on your future.
12. Spread knowledge. ALL THE BEST FOR FUTURE ENDEAVORS.

## **7 WAYS TO BECOME SUPER HUMAN**

### **1. CHOOSE ONE TASK AND COMMIT TO IT.**

"Single tasking obliges you to do one thing at a time, excluding any other demands at that moment," Zack says. "This means you must stand firm and genuinely commit to your choices."

This doesn't mean that you need to stick with a single task until it is completed, she adds—few of us have the scheduling freedom for that. What she does suggest is picking a specific amount of time to work on a given task and sticking to it for that much time.

**I believe that approach is the power of the highly popular Pomodoro Technique, in which you work on a given task for 25 minutes at a time (one “pomodoro”) and then take a five-minute break. Whether you use pomodoros or not, focusing on one task at a time is a highly powerful thing to do, especially if you’ve got a tough job to complete.**

## **2. PICK A PLACE TO PARK DISTRACTING INSPIRATIONS.**

**You know what I mean. You’re in the middle of writing an email to a client and suddenly a bright idea for how to pitch another client pops into your head. If you’re a multitasker, your response is to open a new email and start writing that second pitch while it’s fresh in your mind.**

**The wiser approach is to designate a handy place to leave notes to yourself so that you don’t lose your brilliant ideas and can come back to them later while keeping your focus on the task at hand. Ideally, you should quickly switch to a different screen (or pull out a nearby notepad), jot down a few words or a sentence that will help you remember your bright idea, and then go right back to what you were doing. Zack uses her smartphone for this purpose; I use Evernote.**

**Whatever method you choose, it should be quick, near to hand, intuitive for you, and as brief an interruption as possible.**

### **3. GIVE YOURSELF THE GIFT OF DISTRACTION-FREE TIME.**

**“It’s up to you to control your environment—to ‘build fences’ to keep potential distractions, such as noise and pop-ups, at bay,” Zack says. It’s easy to blame your co-workers (or the people you live with, if you work at home) when they distract you. It’s also easy to blame your technology for distracting you—the incoming email or Facebook notification that bings or buzzes, the incoming phone call or text.**

**The fact is, being distracted or not is mostly within your control. If you have an office with a door, close that door during conference calls, while working on projects, and other times you need want to focus on a single task (which should be most of the time). If you work in a cubicle or your office has an open floor plan, use a sticky note or some other means to signal that you don’t want to be disturbed right now. And you can block calls, texts, and other such**

**distractions by closing your email window and silencing your phone's notifications.**

#### **4. PERFORM RELATED TASKS IN CLUSTERS.**

**Answering email messages, texts, and social media messages as they arrive is a great way to abandon your focus and get that addictive dopamine craving filled. Resist the temptation by relegating certain tasks to certain periods or times of the day. For instance, you might limit reading and answering email to three times: when you start work in the morning, at lunch time, and right before you stop for the day, Zack suggests. That way, email won't interrupt you the rest of the time.**

**It's also smart to cluster tasks by topic because that will help you increase focus. You may be receiving email about many different projects or sales opportunities. If you respond to them project by project, instead of in the order they arrive, you'll be able to focus better on each overall topic.**

## **5. GROW YOUR ATTENTION SPAN WITH A LITTLE QUIET TIME.**

The average human attention span is eight seconds, Zack says. “This is one second less than the attention span of a goldfish,” she notes. One reason is that modern humans can satisfy our own desire for distraction every waking moment and are never alone with our thoughts.

So fight that tendency by scheduling a few minutes of introspective quiet time into your daily or weekly routine. Formal meditation is one way to achieve this, but so is this simple five-minute exercise. Just giving yourself a few minutes to daydream works too.

## **6. BECOME A MASTER AT SAYING NO.**

None of us like saying no, and all of us like to think we can take on one more project, one more volunteer task, one more social engagement. But that’s a recipe for disaster, Zack warns. Instead, she says, we must learn to say no gracefully.

**“It’s perfectly fine, even responsible, not to respond to every request immediately,” she says. And saying no doesn’t make you selfish. “‘No, I can’t right now,’ is not equivalent to ‘No I won’t ever do it,’” she adds. “What you’re really saying is that, just as you’re committed to your current obligation, you’ll be equally committed to their request when the time comes.” (And if you’re wondering which tasks to say no to, this approach to streamlining may help.)**

## **7. ASK THE PEOPLE AROUND YOU TO HOLD YOU ACCOUNTABLE FOR FOCUSING.**

**“Old habits die hard,” Zack notes. “From time to time, you’ll almost certainly go back to your old ways, reverting to task-switching. So ask your family, friends, and co-workers to call you out.”**

**Not only will this help keep you honest about focusing on one task at a time; it will have extra benefits as well. If the people in your life understand that you’re trying to build focus—and that you want their help in that effort—they’ll be in your corner to help make that happen. Besides holding**

you to your no-distraction plan, they may look for ways to keep distractions from reaching you. They may even think twice before distracting you themselves.

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Mental Calculations – Getting the result fast

### 1. ADDITION OF 5

When adding 5 to a digit greater than 5, it is easier to first subtract 5 and then add 10.

For example,

a.  $7 + 5 = 12$ .

Also  $7 - 5 = 2$ ;  $2 + 10 = 12$ .

### 2. SUBTRACTION OF 5

When subtracting 5 from a number ending with a digit smaller than 5, it is easier to first add 5 and then subtract 10.

For example,

a.  $23 - 5 = 18$ .

Also  $23 + 5 = 28$ ;  $28 - 10 = 18$ .

### 3. DIVISION BY 5

Similarly, it's often more convenient instead to multiply first by 2 and then divide by 10.

For example,

a.  $1375/5 = 2750/10 = 275$ .

#### 4. MULTIPLICATION BY 5

It's often more convenient instead of multiplying by 5 to multiply first by 10 and then divide by 2.

For example,

a.  $137 \times 5 = 1370 / 2 = 685$ .

#### 5. DIVISION BY 5

Similarly, it's often more convenient instead to multiply first by 2 and then divide by 10.

For example,

a.  $1375 / 5 = 2750 / 10 = 275$ .

#### 6. DIVISION / MULTIPLICATION BY 4

Replace either with a repeated operation by 2.

For example,

a.  $124 / 4 = 62 / 2 = 31$ . Also,  
 $124 \times 4 = 248 \times 2 = 496$ .

#### 7. DIVISION / MULTIPLICATION BY 25 : Use operations with 4 instead.

For example,

a.  $37 \times 25 = 3700 / 4 = 1850 / 2 = 925$ .

**8. DIVISION / MULTIPLICATION BY 8**

Replace either with a repeated operation by 2.

For example,

$$\text{a. } 124 \times 8 = 248 \times 4 = 496 \times 2 = 992.$$

**9. DIVISION / MULTIPLICATION BY 125**

Use operations with 8 instead.

For example,

$$\text{a. } 37 \times 125 = 37000 / 8 = 18500 / 4 = 9250 / 2 = 4625.$$

**10. PRODUCT OF TWO ONE DIGIT NUMBERS GREATER THAN FIVE**

This is a rule that helps remember a big part of the multiplication table. Assume you forgot the product  $7 \times 9$ . Do this. First find the excess of each of the multiples over 5: it's 2 for 7 ( $7 - 5 = 2$ ) and 4 for 9 ( $9 - 5 = 4$ ). Add them up to get  $6 = 2 + 4$ . Now find the complements of these two numbers to 5: it's 3 for 2 ( $5 - 2 = 3$ ) and 1 for 4 ( $5 - 4 = 1$ ). Remember their product  $3 = 3 \times 1$ . Lastly, combine thus obtained two numbers (6 and 3) as  $63 = 6 \times 10 + 3$ .

**11. PRODUCT OF TWO DIGIT NUMBERS**

The simplest case is when two numbers are not too far apart and their difference is even, for example, let one be 24 and the other 28. Find their average:  $(24 + 28) / 2 = 26$  and half the difference  $(28 - 24) / 2 = 2$ . Subtract the squares:

$$\text{a. } 28 \times 24 = 26^2 - 2^2 = 676 - 4 = 672.$$

**12. PRODUCT OF NUMBERS CLOSE TO 100**

Say, you have to multiply 94 and 98. Take their differences to 100:  $100 - 94 = 6$  and  $100 - 98 = 2$ . Note that  $94 - 2 = 98 - 6$  so that for the next step it is not important which one you use, but you'll need the result: 92. These will be the first two digits of the product. The last two are just  $2 \times 6 = 12$ . Therefore,  $94 \times 98 = 9212$ .

**13. MULTIPLYING WITH 11.**

To multiply a 2-digit number by 11, take the sum of its digits. If it's a single digit number, just write it between the two digits. If the sum is 10 or more, do not forget to carry 1 over.

For example,  $34 \times 11 = 374$  since  $3 + 4 = 7$ .  $47 \times 11 = 517$  since  $4 + 7 = 11$ .

**14. FASTER SUBTRACTION.**

Subtraction is often faster in two steps instead of one.

For example,

$$427 - 38 = (427 - 27) - (38 - 27) = 400 - 11 = 389.$$

A generic advice might be given as "First remove what's easy, next whatever remains". Another example:

$$1049 - 187 = 1000 - (187 - 49) = 900 - 38 = 862.$$

15. **FASTER ADDITION.**

Addition is often faster in two steps instead of one.

For example,

$$487 + 38 = (487 + 13) + (38 - 13) = 500 + 25 = 525.$$

A generic advice might be given as “First add what’s easy, next whatever remains”. Another example:

$$1049 + 187 = 1100 + (187 - 51) = 1200 + 36 = 1236.$$

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**LAST WORD**

Thanks for giving your valuable time for reading my book. I hope it will help you in getting good marks in mathematics.

I am RUDRABHA MUKHERJEE from INDIA. I am the founder of THE MATHS PACK ([www.theMathspack.com](http://www.theMathspack.com)) and I have no team-mate till now please do guide me so that I can be able to help you all in mathematics.

Of course we all have very limited time with us but I can assure you that I can help you in mathematics by going out of the way if needed.

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