How to prepare for CMI?

Jul 22, 2013 • Sai Krishna Deep

First off, I would like you to know a few facts about myself in order to get a context of things. It wouldn't be appropriate if we are trying to understand something with completely different backgrounds.

1. I went for FIITJEE for 2 years. I loved Math and physics. I focused on math mostly because I liked it. I was good at math in my class. I was good at IIT related math.
2. I didn't qualify for CMI 2012 because by the time I had known about it, it was pretty late. And IIT preparation merely helps it.
3. Math at 11th/12th that is taught at school is NOT Olympiad math. It is applied mathematics. Having fun with Olympiad math gives you an edge at CMI examination.
4. I did not take coaching classes for Olympiad math. An IIT student spent some effort with me for not more than 24 hours in total. But that was sufficient.
5. I was doing math from various books and also checking out AoPS for new problems.
6. I used on spend on an average of 3 hours on Olympiad Math. Sometimes, up to 8 hours depending on your interest. I don't want to use the work hard work here. It's more of your interest that gets you anywhere.
7. I did not know the ABC of Olympiad Math during 2012. But now I will be joining CMI in 2013 with a decently good background in it. Which means, all you need is interest for math.

About the CMI Exam

The exam pattern is highly variable. If you look at their past question papers, you will notice that they constantly change their pattern and the difficulty of questions. It is done so to filter out the drilling methods that go on in IIT. All the questions can be answered with the basics. I would probably put them on the level of INMO based on the time, number of problems, and difficulty of the 2013 paper. A good balance between speed and critical thinking is important.

My preparation

Like I already mentioned. I would study as less than half hour a day or up to 8 hours a day depending on my interest. Therefore, spending quality time with the subject is important. Also, I did not prefer buying all the books I wished to have. I often used to download the free ebooks and find good problems and do them. A smartphone comes in handy :P
In mid 2012 I was checking on how to prepare for Olympiads and stuff. And I found a few VERY useful articles that will help any math enthusiast - Vipul Naik

I referred to the books that were prescribed on the site along with a few better books. I will be attaching the eBooks which I USED in a few days. That is, the ones in which I highlighted a few and stuff. They might have marking here and there with red color. It was used for marking the ones I solved :P If you want to find the fresh copy of any ebook just use Google wisely "'blah blah blah' by 'author' pdf ebook download.

I have shared my collection of math material that I collected and used on my Google Drive. https://drive.google.com/folderview?id=0B0z4bz7rv29yZVdHX2ZqRHh0Njg&usp=sharing. Most of the books mentioned below have been linked and a lot more. And the CMI Entrance Exam papers have also been linked up.

1. Problem Solving Strategies - Arthur Engel
2. Putnam and Beyond - Titu Andreescu
3. Try the books on Number Theory, Algebra etc etc by Titu Andreescu
4. Problems from AoPS
5. A path to Combinatorics for undergraduates - Titu Andreescu
7. Number Theory by Burton
8. Geometry I referred only from 10th standard mathematics. If you want good geometry books you can ask people at AoPS.

Some questions in these books are very tough and it is up to you to wisely select a few do able problem at start then move on to the tough ones. I didn't follow any pattern of the above books. I did a bit of the easy books that CMI officially prescribed and then moved on to randomly selecting a few good problem here and there. Gradually, increasing the difficulty of the problems of the chapters I liked. But in the end I made sure I finished the important parts which I liked from the above books.

I kept in my mind how a few questions of topics which I didn't like in CMI question paper. In that way, I made sure I didn't leave those parts off completely. Even though I wouldn't recommend anyone doing this. Like I mentioned above, CMI papers are highly unpredictable. Luckily for me the geometry was easy this time :P

The Most important thing

DO NOT take learning as math as a job for the sake of examination. If you do so I can guarantee you that you will not happy even if you get into your desired college because competition would be the only thing that you would like. Therefore, the primary thing is to enjoy the subject! Read up a few journals online, read about the International Olympiads, People and their
performances, check out the latest developments in the field of mathematics and stuff like that. Keep learning and have fun! :D After all it's just an exam. I realized that only this year when I was least bothered about how I would perform in my exam (That doesn't mean I was sleeping in the exam hall :D)

I will soon be posting on various opportunities Indian Students have in the field of mathematics, physics and other sciences. So check that out too!!

**UPDATE: 11-11-2013** Sorry, I haven't been updating the content due to Procrastination.

**UPDATE: 14-11-2015** Drive link updated. Sorry guys, Couldn't reply to any of your mails/comments. Been busy myself.

**UPDATE: 7-7-2016** Sorry guys, I don't maintain this blog much. I have gone through some comments and emails. Though, I would like to answer some math questions. It is really painful for me to see these challenging questions.

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**can a student from north india crack this exam.?**

First off, I can't give you life advice. "I'm 20 years old .. I'm not sure whether I should chose IAS over this" .. etc etc... I'm not a counselor, man (come on!) .... Send **CMI ADDMISSIONS** the mail about your age concerns. I've written this post for math aspirants who live and breathe math and consider math as a profession. If you're head is in the game and you want to know more details, send the **CMI ADDMISSIONS** a mail. THEY REPLY WITHIN A DAY. USE THAT EMAIL!

For other questions, like some wise soul in the comments, use this website called [https://www.quora.com/topic/Chennai-Mathematical-Institute](https://www.quora.com/topic/Chennai-Mathematical-Institute) which does precisely that.

As far as the math doubts are concerned. I've answered some questions within my reach. I've written all my books and references. Take it as an advice to shed some light along your path. Not a bible. Individuality is the key for human survival.

Please don't ask questions which are just rephrased from what I've answered.

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**I am preparing for jee. does the mathematics I am studying would help me for cmi exam ,if not should i only concentrate on cmi syllabus . how should I do it . bcoz I have 1 yr left so please tell me sth abt it.**

I really doubt you even gave it a proper read. Specifically for questions like these, I explained the position I was in so that you can gauge your position yourself and read the post. You don't have to copy paste it in the comments dude :P

For , Questions like "What do you think about Blah Blah book by Blah. Is that a good book?". Frankly speaking, I do not know. I study physics at a graduate level and I lost track of the current olympiad material. You should understand that this was me 4 years back. Ask people on [https://artofproblemsolving.com/community/c260_india](https://artofproblemsolving.com/community/c260_india) who are more informed :)
And please be sensible, I DO NOT work in CMI office. I wouldn't know if there are 10 students selected or a 10,000 students selected or what the cut off scores are or the number of letters in the 4th word of the 5th Question in the 2016 paper. They have their own website for that FYI.

Finally, I'm really glad from the bottom of my heart who make it into CMI or any other college of their choice to pursue sciences with this info and in general how this post motivated you towards math. It really means a lot. Thank you and Goodluck :)

85 Comments

Sai Krishna Deep

Join the discussion...

Sanchari Sen • a year ago
I want to prepare myself for phd entrance exam in computer science of CMI . What can I do ? I just completed my MSc in computer science with 54.5% . Will I eligible for the exam ?

Vyshnav • 2 years ago
Will my CMI entrance exam preparation help me for JEE

Mayank ➔ Vyshnav • a year ago
Straight No, Cmi -----------> Olympiad Mathematics
IIT/JEE------------------------->Applied/Engineering Mathematics

Irfan ahmad reshie • 2 years ago
Which books are recommended for MSc mathamatics in CMI,and sluybs .how I should prepare this examination as I join Bsc nowadays.so I decid I shall keep my way clear for MSc in mathamatics at CMI or in ISI's. That is why I want to learn firstly for entrance.

KEVIN PHILIP • 2 years ago
Hello..I'm Kevin..I was forced to take engineering in 2013 and now I've completed.. During my school days (12th) I was interested in doing only maths problems...At that time I didn't like science subjects. Frankly saying I didn't like to read books. Anyway I've completed 12th with good marks in maths and I was forced to take engineering and got admission in a college
only because of higher marks in maths... After 12th I did write CMI exam and it was like blank...I didn't understand anything...Only one type of class 12 problem I did and it was based on calculus...I remember....Anyway that's the past.

I'd like to take Msc mathematics at CMI. Is it possible to get there with my engineering background?

What are all the things needed/measures taken to get Msc mathematics at CMI? Suggest some study materials for the portions for CMI Msc mathematics entrance exam.

random rocket99  KEVIN PHILIP  a year ago

see your perfectly eligible for that programme.but thing is that the extent and rigor of maths taught in msc at cmi is on different level.So unless you have studied rigorous maths along with your engeneering( not eng. maths bsc maths is very different,which includes topology,advanced linear algebra,real analysis,complex analysis ect) i wont recommend you to apply for it,but if you have interest in mathematics i would suggest you to go for msc in application of mathematics at cmi you can crack entrance with bit of efforts .You can even go for msc in financial mathematics to few reputed institutes in india or abroad(university of bonn germaany,uchicago,ecole normale,eth zurich, london school of financial economics to name few) .Pursuing msc maths from local collage might be doable but i doubt about cmi, so go for options i suggested you

ponnaa muthukumar  2 years ago

Hi
ur blog helped me a lot thank u
i am a stateboard student so i am afraid about this cmi entrance exam
i feel that the questions asked are so complicated....so i need ur help and guidance....please help me

moumik  2 years ago

I mainly love mathematics. I want to pursue bsc in math and cs from cmi or bmath from isi. I am studying Olympiad math since class 9. I also study in fiitjee. now I have one year in my hand. I don't like jee because I only like maths. So what can I do?

Raunit Singh  2 years ago

hey I love maths actually its my dream to be able to do IMO level questions and become a mathematician and do maths for a living and i am not just writting this to get your attention , i really mean it . i came to know about isi late this year and i really want to get into this institution . I NEED GUIDANCE ,i am completly lost . if i start describing my problem here then it would be a long comment and one wont even bother to read the whole comment . so i really request you to please connect to me through facebook or whatsapp . i really need some guidance .
Raunit Singh • Raunit Singh • 2 years ago
please help me , i am waiting for your reply or please just me who can help me ?, it would be great of you if you could tell me ,who could help me?

souvik • 2 years ago
Hi, can u tell me what calculus book should I use for this kind of exam. I am weak at that part basically.

Yoda • 2 years ago
What is the time limit for the CMI entrance exam? I can't find it on their website.

sameed • 3 years ago
Hello Sai , thanks for the suggestions. so far they have been quite helpful. i wanted to ask the the time duration of the exam. i hope you reply soon. thank you.

Nikhil K • 3 years ago
I am preparing for jee.does the mathematics I am studying would help me for cmi exam ,if not should i only concentrate on cmi syllabus .how should I do it ..bcoz I have 1 yr left so please tell me sth abt it..

Swaroop Pandurangi • 3 years ago
I passed 12th in 2014 & due to parental and relatives pressure I joined a reputed College in Bangalore. I couldn't clear JEE though. I had no interest and in March 2016 I spit that out about my further education and interests in front of my parents. They supported me and said that I can pursue anything in my life. I've a keen Interest in mathematics and I basically love mathematics. I've been a tutor myself for an year for 8,9 and 10th standard students. Now I'm preparing for CMI/ISI/IMA. I want to ask you is it too late I mean I'm 20 years old and even if I crack CMI and will they reject me? because unlike you I've dropped my engineering and now I'm preparing for these exams. I'll attend these exams next year. So I wanted to know that age really matters? . If I get selected for an Interview will they ask me about my age? I'll be 21 if I get admitted next year. Should I pursue any other courses? If I don't get into ISI/CMI and if I get into IMA should I join? Please Help!!!

Anish • 3 years ago
what is the criteria for a candidate to get selected in cmi without interview?
Amartya Muthal • 3 years ago

Also, can you tell me where I can find functional equations with a calculus flavor?

random rocket99 ➔ Amartya Muthal • a year ago

b.j. venkatachala book

keerthana • 3 years ago

Hi, I am a state board student, no experience with Olimpiad, IMO or INMO. Still I could compete for CMI?. Your suggestions and guidance please.

Amartya Muthal • 3 years ago

Hello, I will be appearing for CMI entrance exam this year. Any ideas on how many questions i should solve to be able to get through?

Harthy • 3 years ago

Hello...

Am studying 11th std in state board..I love math..I want join in a good institute in and make my life as better as I can...I prefer cmi..would you plzz tell me which books will help me for the entrance.. It vl b very useful for me..plzzz..am ready to give my best..but I don't know the way...please help me..

Ayushi • 3 years ago

Sir, I have completed my 12th in a CBSE school. And I wished to do something in maths, since I am good at it. But I chose engineering over this, as I did not have much knowledge about admissions and stuff. I attended engineering classes for a few days, and I realised I can't do this. Now however I am at home doing absolutely nothing. When I asked one of my friends about pursuing a career in maths, He said that the maths you'd study there will be completely different. I got 92.6% in CBSE but my jee score sucks. Can you tell me whether choosing a career in maths is a good idea for a person like me. Also I am clueless about Olympiad maths. Please do reply. 🙏🙏

Vignesh • 4 years ago

how many seats are there in isi b math bangalore ?

Karthik ➔ Vignesh • 4 years ago

This year admission was offered to 66 students out of which about 30 (I'm guessing)
This year, admission was offered to 66 students, out of which about 30 (I’m guessing) would join the course.

Malavika E • 4 years ago
I am a student of Central University Pondicherry. Now I’m entering into my second year B.Sc Mathematics. I wish to get into CMI for my Master degree. I tried for B.Sc in CMI but, I couldn’t achieve it. So I should never miss this chance. How should I prepare myself for the same?

Malavika E • 4 years ago

Ankit Chabarwal • Malavika E • 3 years ago
Quora.com is a better place for such queries.

Malavika E • 4 years ago

banana • 4 years ago
Hi Sai krishna,

From what I understand you have bypassed the CMI interview, and I’m quite sure you must have performed very well in the exam.

How many questions were you able to solve in the exam?

Thankyou

banana • 4 years ago

Akshara Prasad • 4 years ago
Can a student receiving the monthly stipend at CMI also receive KVPY fellowship if he has cracked it?

Malavika E • 4 years ago

Sai Krishna Deep • Akshara Prasad • 4 years ago
Actually no, but I don’t see how this money issue is being posted here. I was hoping for some questions regarding your math interests. I guess I was wrong.

Malavika E • 4 years ago

Sai Krishna Deep • Akshara Prasad • 4 years ago

Akshara Prasad • 4 years ago
I fail to understand why you think I asked only about the money. You must be knowing of the other opportunities one gains if he/she has cleared KVPY. Please understand.

Malavika E • 4 years ago

Rahul Das. • 4 years ago
My question to you is that by clearing inmo with a good rank for a class 11 student would give admission to isi or cmi or not, will i get a call and after that will i need to give cmi or inmo in my 12th grade also or the one at class 11 would do. one more question to you is that i am a eco, maths and science student and want to pursue maths and physics in cmi is it necessary...
eco maths and science student and want to pursue maths and physics in cmi is it necessary to have computer science to get admission. please do reply and help me prepare

Aditya • 4 years ago
Can u give the link to functional equations for Olympiad
Your blog was very helpful

Sai Krishna Deep • Aditya • 4 years ago
Finally! A math related question. Sorry for the extremely late reply. I think, I mentioned a book in my post, B.J Venkatachala. It's elementary and I liked it. I think aops has really nice functional equations though I could never really get the knack for it. This guy is extremely good at functional equations:

keerthi • 4 years ago
how shall iprepare far cmi entrance being amatric studentr? is there any coaching Institutes for this entrance? how whshall i prepare with the study material without the help of teachers?

Shubham • 4 years ago
Thank you!!!!!!

Pradipto Banerjee • 4 years ago
Congrats mathematician.... can u pls tell how u started and how u went on securing admission at CMI? Means the sequence of the material u followed and preparation tips nd tricks.... thank u and all the best for upcoming challenges

Abir • 4 years ago
How much of Group Theory might be required for the CMI exam?

Sai Krishna Deep • Abir • 4 years ago
None. If its for B.Sc. For M.Sc I think atleast Artin should be done.

Abir • Sai Krishna Deep • 4 years ago
Its for B.Sc. How many subjective questions do you think will be a safe bet for qualifying the exam? I am also not that good in Geometry! :D
Ankit • 4 years ago
From where did you practiced Determinants and Matrices? Is NCERT enough or some other book? Also, what about Vectors???

internetuser • Ankit • 2 years ago
You can use Hall and Knight or Barnard and Child. Also, you can study the problems asked in JEE-Advanced

Abir Mukherjee • 4 years ago
Most problems from Problem Solving Strategies are really tough. Did you solve most them while preparing?

Sai Krishna Deep • Abir Mukherjee • 4 years ago
You should try and solve them irrespective of the exam. It's good math :\ They have really nice problems.

Rahul Kanekar • 4 years ago
I am in my 11th standard now and I am doing algebra from the book higher algebra. Can you recommend some good ones for calculus and coordinate geometry please.

Sai Krishna Deep • Rahul Kanekar • 4 years ago
I used to do some problems from S.L.Loney. Nothing in particular like that I know.

Rahul Kanekar • Sai Krishna Deep • 4 years ago
Does Putnam and beyond include calculus??

internetuser • Rahul Kanekar • 2 years ago
Yes, Putnam and beyond has calculus, some real analysis and linear algebra

Karthik • 4 years ago
What are the most important concepts and topics as far as the exam is concerned?

Abir • 4 years ago
Hii
I wanted to know that whether gap year matters in the admission procedure? I passed 12th in 2013. Took a drop year but couldn't appear for CMI exam. So I took admission in a good engineering college but still I want to get into CMI next year. So, I am preparing for it. Do you think my gap year and this one year of engineering would affect my chances of admission in any negative way?
Please help! Thank you! :)

Ankit • Abir • 4 years ago
No man. I'm also in the same situation and contacted them for the issue and their reply was positive.

Abir • Abit • 4 years ago
Thanks!! :)
I am a class 12 CBSE student and I live in Chennai. My desire is to do a computer course in CMI, I have written this year AMTI and have 24 out of 30 questions right. I am also interested in computer science. I solve problems in IARCS problem archive. What should I study to get a seat in CMI. What are the different admission processes involved in the process and could you please guide me in this regard. I am not a professional in advanced mathematics and I do not have a proper teacher to guide me. Should I watch any other lectures to improve my math skills and could you give me those links. Please help me...Please reply soon...

Sai Krishna Deep • kousik • 4 years ago

Just keep doing math and do good problems from the references above, let it guide you. The Exam is just a time bound problem solving, if you have problems with that, set up time restrictions while you try problems. Indian Informatics Olympiad is something that people in coding take part in.

Admission is like any other procedure. Contact admissions@cmi.ac.in They will answer all the admission related issues. Sorry for the late reply! :)

Cheers! Sai

TheDarkHorse • Sai Krishna Deep • 4 years ago

Hey there, hope you are well. I desire to ask a few questions.

1) During your interview were you categorically asked about your board marks? What was the role of your board marks?
2) If an individual had low board marks in maths, assume in 50s or 60s (Taking extreme case here) but performed well in the CMI entrance...will there be question marks over the board marks in the interview? Will it prove to be a stumbling block? (Although school had applied math, not olympiad type pure math)

Please do reply swiftly.
Sai Krishna Deep ➔ Kush • 5 years ago

No I didn’t. I prefer self study.

riya • 5 years ago

can a student from north india crack this exam?

Sai Krishna Deep ➔ riya • 5 years ago

I don’t see how that is relevant.

The Dark Horse • 5 years ago

Oh! And one more question! Did you give the ISI paper? Why did you choose CMI over ISI?..

Sai Krishna Deep ➔ The Dark Horse • 5 years ago

CMI offers more freedom and since Acads have not been my only interest, I had decided to choose CMI. Also, for the physics course.

The Dark Horse ➔ Sai Krishna Deep • 5 years ago

Thank you for the swift informative inputs.. I may trouble again in future.. till then.. take care! :)

The Dark Horse • 5 years ago

Your blog helped a lot and I appreciate the peaceful approach you have. I wish to ask a question.. if an individual has the HSC... and has one bachelors degree already... can the individual give the bachelors (not masters) paper for CMI (at age 23/24) ... that is attempt to earn a double bachelors?... is it allowed? I know it sounds crazy.. but please do reply.

Sai Krishna Deep ➔ The Dark Horse • 5 years ago

Hi! CMI has a very open approach towards admissions and stuff. I think that is possible. You can ask them personally through email. I would suggest you contact our dean at madhavan [at] cmi.ac.in. He will definitely reply! :)

The Dark Horse ➔ Sai Krishna Deep • 5 years ago

Thank you for such a swift reply! I would like to ask two more questions...
1) While preparing for the CMI entrance.. did you prepare to IMO level questions? Or INMO level.. or a combination.. or simply go as deep as you could in your area of interest?
2) What has been your opinion so far on the crowd/social life of CMI? The pros...
How to prepare for CMI? | sai krishna deep

What has been your opinion so far on the crowd/social life of CMI? The pros and cons..and how have you adapted to the cons! Sorry to trouble so much!

Sai Krishna Deep • The Dark Horse • 5 years ago

1. I've done quite a number of INMO problems and a few IMO problems here and there. But mostly, I did number theory back then because I liked that particularly, whereas I used to not even glance at geometry because I didn't develop an interest for it.

2. There isn't much of a social life. I guess you have to accept the prime reason I'm here at CMI, that is to learn good stuff from good people.

Ritwik • 5 years ago

Hey I am very weak in functional equations and geometry. Please recommend a few good books to develop those topics.

Sai Krishna Deep • Ritwik • 5 years ago

You could try this book: Functional equations by B.J. Venkatachala. And you will get a lot of functional equations here: http://www.artofproblemsolving... Better you follow that.

As for geometry, you could ask people in the geometry section. I'm not very comfortable with it.

Karthik • 5 years ago

Okay! Any book suggestions for elementary geometry?

Sai Krishna Deep • Karthik • 5 years ago

Hello, I haven't spend much time on geometry. You could ask the people here. I'm sure they'll help.

http://www.artofproblemsolving...

Karthik • 5 years ago

Great Post!

I would like to know whether KVPY scholars have any special considerations during admission to CMI.

Sai Krishna Deep • Karthik • 5 years ago

As far as I remember. Only INMO candidates are given special consideration. It's better you contact CMI admissions for the official details. admissions@cmi.ac.in
Nishant • 5 years ago

Thanks for this post, It helped me paint a better picture of CMI preparation. I, like you, also have a sweet tooth for Maths in particular, which I realized half way through 12th, I was doing well in my classes too, but I procrastinated. I know now that my 12th and JEE scores are low, but my plan now is to drop a year, or take admission in a college and stay at home to prepare for CMI next year. I hope we connect early, Thanks again for this post. Also, if you have a personal email, please, I'd like to associate with you. Thanks again!

Sai Krishna Deep • 5 years ago

Hello Nishant!

I'm glad this article helped you! :) You can connect to me via Facebook or Email (saikrishna2deep@gmail.com).

Thanks,
Sai

charan • 5 years ago

Did you dropout one year or did you got to college and study.??. which college did you go to in that one year gap?

Sai Krishna Deep • 5 years ago

Hi charan, Yes I did. I stayed back and home and did math.

Vivek • 5 years ago

Hey Sai Krishna! I came across your blog while looking for CMI/ISI paper solving strategies and interview questions. I was in FIITJEE(Pinnacle) as well but in Bangalore. I screwed up JEE last year due to my indifferent attitude towards Chemistry. I dug deep looking for positives, I found that I had deep interest for Mathematics particularly pure mathematics(a.k.a Olympiad Maths). Since, then I had been doing Math from books like Higher Algebra(Hall&Knight), Number Theory(Burton), Challenges and Thrill(4 indian authors), Calculus(I.A Maron), Applied Combinatorics(Tucker), Functional Eq(B J V), Problem solving strategies(Engel) and my progress had been good so far. Can you please guide me how to tackle questions in the CMI paper. How many to solve? How many to solve from each section? What is the most important factor to make that cut? What are the questions asked in the interview? Any other useful information you would like to share. What are the important things I should do in these last few days? Thank you so much in advance. It'll be of tremendous help to me. Thanks again