It doesn't matter when you work on problems, as long as you spend a lot of time behind them, but do be aware of your routines.

Solution Writing AoPS User: V\_enhance, darij grinberg

# Starting point

Art and craft of problem solving Geo revisited

104 number theory problems

IMO Shortlist solving (2010 - 2018) Solution reading

**Online Contests** OMO ELMO

Sharygin NEMO IMEO CMC

# Geometry

\*\*\* Before jumping into BASHING, you need to be able to solve G3-4 under ~half hour regularly \*\*\*

using algebra to solve geometry problems Barycentric coordinate

Cartesian Coordinate Trigonometry Complex Number Vector bash

You get either 0 or 7 point for a bash solution.

Books

\*\*Geo revisited - H. S. M. Coxeter Geo Unbound - Kiran Kedlaya

No figues EGMO - Evan Chen

New Problems in Euclidean Geometry - David Monk

AoPS Users:

Luis Gonzalez - Onek shundor solutions (Gonju shona)

TelvCohl - Onek technical and advanced Buratinogiggle - Weird Problem maker Jean-Luis Aime - Professional geometer

Navneel Singhal - https://[www.coursehero.com/file/20780603/Lemmas-in-Geometry/](http://www.coursehero.com/file/20780603/Lemmas-in-Geometry/) Notes:

\*\*Yufei Zhao - BigPicture, Three Lemma, Circles, POP

\*\*Alex Remorov - Projective geometry Evan Chen - A lot of notes

Problems:

Iran Contests - Best geo problems you will find on AoPS USAMO, USATST - Standard Problems

China - Advanced Geo problem Sharygin - Beautiful Problems

Be aware of Vietnam, Korea, Taiwan (bash kora publix)

By NO means these are bad problems, they are just more technical

# Algebra

Functional Equation

Functional Equations and How to Solve Them Functional Equations- Titu Andreescu, Iurie Boreico

https://olympiadtraining.files.wordpress.com/2014/10/andreescu-boreico-functional-equations

Notes:

\*\*Evan Chen Note, elementary, advanced (Monster) IMOMath

AoPS:

\*\*pco - 169 problems by pco (compiled by Anant Mudgal) bappa1971 - DJ vai

# Polynomial

Notes:

\*\*Yufei Zhao - Polynomials Po Shen Loh - Polynomials

Amir Hossei Parvardi - 100 Nice Polynomial Problems With Solutions - Amir

Hossein Parvardi

Inequality (For Fun, don't expect to see pure ineq problems in IMO) Secrets of Inequality Vol I-II - Pham Kim Hung

Inequalities: A Mathematical Olympiad Approach - Antonio Gmez Ortega Jos, Radmila Bulajich Manfrino, and Rogelio Valdez Delgado

Brilliant - https://brilliant.org/wiki/classical-inequalities/ a>b - Kiran Kendalay

Notes:

Samin Riasat - Basics of Inequality Evan Chen

Thanic Samin

Problems: USATST

Iran TST Indian FE

# Number Theory

\*\*\*104 Number Theory Problems

Topics in Number Theory - Amir Hossei Parvardi, Masum Billal

Notes:

\*\*Lifting the exponent lemma - Amir Hossein Parvardi

\*\*Evan Chen - Orders

\*a^n ±1 - Yufei Zhao

Number Theory - Masum Billal Evan Chen - Construction TukTak aro onek note ase

Problems:

USA problems Iran

All Russia Canada Balkan MO Romania Indian

# Combinatorics

\*\*\* The Art and Craft of Problem Solving

\*\* Path to Combinatorics for Undergraduate

Problem Solving Methods in Combinatorics an Approach to Olympiad (Easy but beautiful Problems)

\*\* Problem Solving Strategies - Arthur Engel (Joss for problem solving) # Winning Ways for Your Mathematical Plays V1 - John Conway

\*\* Olympiad Combinatorics - Pranav A Sriram

## Research Combinatorics - (HARD) Yufei Zhao Graph Theory and Additive Combinatorics

Combite Hatekhori - Adib vy, Zawadx, Joydip vy Proman koro je

Note:

MellowMelon Post Collection

Graph Theory:

Adrian Tang Evan Chan Po Shen Loh

Probability:

Po Shen Loh - Probabilistic Methods in Combinatorics

Yufei Zhao

Algebraic Techniques in Combinatorics Bijections

Comb - A Contest of Contests Combinatorics 1 Combinatorics

Counting in Two Ways

Determinants - Evaluation and Manipulation similarity

Tiling - Coloring and Weights

Problem:

All russia (weird) ((Beautiful)) (Cute) Tounament of Towns (^^)

Polish MO/OI

Iran TST (Standard)

USA(MO, TST (Standard) Canada

Serbia Romania

Romanian Masters in Mathematics European Girls Math Olympiad Indian

France

european mathematical cup

CP prolem with mathy flavor - AtCoder (Japanese) CodeForces --Construction (Mathy Flavored Problems)

AoPS Users: MellowMelon Evan Chen

# Notes:

Yufei Zhao Notes - <http://yufeizhao.com/olympiad/>

Alexander Remorov Notes - https://alexanderrem.weebly.com/math-competitions.html Evan Chen - web.evanchen.cc/

Po Shen Loh - [www.math.cmu.edu/~ploh/olympiad.shtml](http://www.math.cmu.edu/~ploh/olympiad.shtml) IMO Math - https://imomath.com/

AnkoGonit

Amir Hossein Parvardi

Adib Vai - https://drive.google.com/drive/folders/0B8NfhxOmm\_tpbW1zOENuWElCTWM Canada MO notes - https://sites.google.com/site/imocanada/

New Zealand MO notes - https://[www.mathsolympiad.org.nz/resources/](http://www.mathsolympiad.org.nz/resources/) Mathematical Excaliber - Monthly Math magazine by HKUST

# MUST READ: A Mathematician's Lament - Paul Lockhart Camp Note folder -

https://drive.google.com/drive/folders/1EdRuOlMyM58GwMJ1-gjXpOnDNJ29q9Xd?usp=sharing

**BCS Question Bank** - M Ahsan Al Mahir

# Ayub vai number - 01971385551

If any one wants to be a part of our organization - icmcbangladesh.club/