International Youth Math Challenge

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Dear IYMC Organizers,

I am Shubham Nahata, currently a pre-final year undergraduate student pursuing M.Sc.(Hons.) Mathematics and B.E.(Hons.) Electronics & Communication Engineering at Birla Institute of Technology and Science Pilani, Pilani. It is my pleasure to submit my solutions to the International Youth Math Challenge in the Senior Category. I greatly appreciate the opportunity to participate in such a challenging and rewarding experience. It was really fun attempting the problems provided.

Honestly, it was a trip down memory lane to my high school days. My favorite problems among all the five problems were Problem A and Problem E. I have always loved Geometry and Sequences & Series, and I could solve both problems in very little time. I also chose the route of typing the solutions digitally since I wanted to learn LaTeX, and now I can appreciate how intricate and involving digitally typing mathematical equations can be. I am grateful to the organizers for providing this facility, as now I can proudly say I have learnt a new and crucial skill.

I would also like to share the approach I followed while solving the problems. I adopted the mindset of teacher-learner pedagogy while solving and writing my solution. I assumed that the reader of my solution needs to learn from scratch about that particular problem and should feel confident about the understanding of the problem. I wrote down all the solutions by hand first and then converted the same to LaTeX when I had verified all my solutions and the steps involved. I have also highlighted the breakdown of skillsets and mathematical concepts involved for every problem. I believe that every problem can be broken down into a collection of interconnected concepts and ideas, and the beauty behind all this is that even the most difficult problems are made up of elementary and fundamental concepts.

I would also like to highlight that a few problems could be solved by multiple solutions, but in the interest of simplicity and utilizing fewer pages, I have presented my best and most favorite solution — the one that I could think about first.

In conclusion, I would like to reiterate my gratefulness to the organizers for this incredible opportunity. I hope and pray that I qualify for the next round.

Thanking You,

Yours sincerely,
Shubham Nahata,
Math Lover