The redprint to not getting a 9.0 on the TMUA/ESAT.

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The following are some of the common mistakes that I made when I first started preparing for the TMUA. You do not need to feel embarrassed because you made these mistakes, because NOW YOU KNOW. Neither must you feel pride or be flippant about those who make these mistakes, because everyone, even myself who got a 9.0 on the TMUA and finished the exam live in less than 25 minutes, made every single mistake stated here. On top of that, I believed these lies religiously to be true, just to realise that it was the complete opposite of the truth. Remember; winners simply lose more than losers.

This document is named Redprint, because it lists the red flags, alongside being a nice contrapositive to the blueprint. The redprint consists of an exhaustive list on how to guarantee failure in the TMUA/ESAT, and why these fail to yield proper returns. (I group these two together in most of my analysis because they are nearly identical in the cognitive process that you must train in terms of agility and intuition.)

When you are attaining your goals, a pronounced minority of individuals just get there faster, and for the vast majority it appears almost saintly. The reason is simply due to the fact that they acknowledge in advance the mistakes that beginners are prone to making. It’s wise to know these potential pitfalls beforehand. This document provides these, because you are inevitably going to make them, and you should be able to climb your way out of that rut that you are stuck in.

In the redprint, we will cover:

1. 30 mistakes that you have been making/will make either consciously or unconsciously.
2. How to correct ourselves, and what the proper approach is.

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1. 30 mistakes that you have been making/will make either consciously or unconsciously.

- You chase random community papers that you found on Reddit/online, thinking some magic community paper is going to get you the same questions on the TMUA.
- You erase your wrong solutions.
- You read the answer sheets/model answers for questions that you got wrong, and simply move on.
- You think understanding and knowing how to solve a question is enough, and you repeat this broken cognitive system for every question that you encounter.
- You don’t do any analysis after solving a question, and think “What is there to analyse if I got it right?”.
- You ask people about what are the best resources to prepare for the TMUA on communities, when you know the truth; TMUA Past Paper analysis.
- You believe that just blindly doing a lot of maths is going to get you a 9.0 in TMUA/ESAT. In other words, your plan to get to your destination is based on hope and fear.
- You save your TMUA/ESAT past papers for last, and do some niche questions that you found somewhere online.
- You skip the step of generalising the question to extract principles that you can leverage and implement into other

questions that you will encounter.

- You think that people that get 9.0s on the TMUA/ESAT, people that get S,S on STEP are just geniuses and have some excuse why that can't be you.

- The concept of you reaching the state where you are solving each TMUA paper in less than 20 minutes is unfathomable to you.

I say this as somebody who believed everything above to be the absolute truth, barely saving myself from this swamp of despair.

I wholeheartedly believed that if I did just a lot of maths, I would be good at maths. But to restate the opening statement in the blueprint;

Mainstream advice is not meant to provide a guideline that yields anomalous results of which we are aiming for. Normal advice brings normal actions, thus normal results that are merely mediocre.

It is better to know the truth in advance, and prepare in accordance, then to pretend that you do not know the truth and avoid confrontation.

This is an exhaustive list of what looks like work, feels like progress, but usually produces marginal improvement in actual mathematical problem-solving ability that these admission tests require of.

1. Reading the model solution and thinking, "Ah, that makes sense," without closing it, reconstructing it and emulating the train of reasoning from scratch.

2. Highlighting definitions, theorems, or key lines in the textbook instead of actually evoking them without looking at them.

3. Rewriting your notes in a cleaner, prettier, more aesthetic format to show someone else or for you to have as an archive.

4. Watching problem-solving videos as if they are content, without pausing and attempting the problem yourself in advance.

5. Collecting PDFs, bookmarks, resource lists, and "best books to prepare" without having a clear weakness to fix.

6. Making elaborate study plans, timetables, or Notion dashboards instead of diagnosing the exact reason you lose marks.

7. Doing lots of easy questions that make you feel competent but do not expose your weaknesses.

8. Saving official past papers for later because you are "not ready yet." or for whatever creative lie you made up.

9. Doing past papers only to get a score, without performing a brutal autopsy on every mistake.

10. Erasing your wrong solutions so you do not have to confront your failures. (This is a massive one)

11. Counting hours studied and thinking more hours is more progress, instead of counting errors eliminated, patterns extracted, or weaknesses removed.

12. Memorising solutions instead of extracting the underlying principle, structure, or decision rule.

13. Looking at hints too quickly, then convincing yourself you "basically knew it."

14. For actual exam practice (which is a completely different skill than being inherently good at maths), practising only in relaxed, untimed conditions, then expecting exam-day speed.

15. Using random low-quality community papers as your main training diet, and having pride in knowing some esoteric resource that your peers don't know.

16. Rereading theory repeatedly without solving problems that force you to apply it.

17. Making Anki flashcards for isolated facts instead of building recognition of reasoning patterns.

18. Finishing a question and immediately moving on without a metacognitive analysis on why it worked or where you almost failed.

19. Checking only whether the final answer is correct, without checking whether your reasoning was clean, necessary, and generalisable.

20. Confusing familiarity with mastery: "I have seen this before" instead of "I can produce this from nothing."

21. Studying only when you feel motivated, instead of training through resistance, cognitive exhaustion and pushing through pain.

22. Avoiding your weakest topics because they hurt your ego, and just taking a note of the topics that you are weak at, without actually taking initiative to fix them once and for all.

23. Chasing exotic problems, or olympiad flexes while your core logical reasoning is shaky.

24. Asking, "What is the best resource?" instead of asking, "Where exactly am I losing marks?"

25. Practising with crutches: notes open, solutions nearby, phone nearby, no time limit, no consequences.

26. Not writing complete, rigorous, cleanly structured solutions because “I know what I mean.” This is also very important. Being sloppy with your chain of reasoning, rather than finishing a statement or a batch of thought.

27. Solving a problem once and never generalising it into a family, principle, or reusable pattern that you can add to your toolkit.

28. Looking at prodigies or elite scorers and using them as evidence that you idolise, instead of studying how they think and how I can emulate that thought process.

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1. Why?

Why do we make these mistakes? For coding, we can see an archive of the wrong mistakes that we made. For supply chain management, we can explicitly see the process of production. For baking, we can see the ingredients we used and the recipe we followed.

Because the journey from zero to arriving at the final solution is all in your head. It’s not explicit and you can’t see it visually, nor should you expect to see it. It’s not that they are abstract or vague (They are not at all by any means), but you can’t visually see them. The biggest problem that is ubiquitous for almost every single model answer that I have seen is that they only show the what (what the ideal chain of reasoning is), but NEVER the why!(Why they wrote out a certain equation or why that revelation was natural to them when it seems almost revolutionary for us. Why did that revelation come to mind, why did they think of some other method but still chose to go with this method.)

You don’t see the reaction circuits, the back end, the inherent principles that the ideal student embodies that led them to be able to come up with those thoughts.

These are a couple manifestations of what someone good at maths may portray:

- They are able to think up of revelations that seem impossible for us to even come up with
- They are able to almost quantum leap throughout processes and skip the entire process

The biological response that our limbic system has when we see someone be good at maths is the following:

But the reality is that you do not rise to your ambitions, you fall to the reality of your daily actions. It is not the hours that you dream about your goals to come true, it is not the hours that you get motivated to do the work, it is not the hours that you engage with the work, it is not the hours you spend worrying about the work. Usually if you strip all this crap, you realise how petty your actual effort actually is, closer to or even less than 1 hour a day.

For me, rather than being impulsive, compulsive without any systems, it is much better to set a time a day and clear out like an hour of trading and an hour of coding and programming. Rather than oh let me do this and just let randomness take over.

You need some sort of anchors daily. Without them the density of the work becomes very sporadic.