



ASE 2020-21 Notes

Lecture Notes by Dylan Yu

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§1 Introduction

Welcome ASE Math Masters! These lecture notes are for the 2020-21 season. Here are a few remarks regarding the notes:

- **Do not distribute them.** I put a lot of work into it, and I would not like them to be public. Of course, any ASE Math Master can use them!
- **They cover a variety of topics.** I will try to go over a topic of TMSCA Number Sense, Calculator, and General Math each week. Note that the notes for General Math are also important to Math League, especially the Sprint and Target sections.

§1.1 Competitions

This year there will be many competitions, including but not limited to:

- **TMSCA**
 - Number Sense – a fast paced 10 minute, 80 question test that covers mental math tricks and fast calculations.
 - Calculator – a 30 minute, 80 question test that tests calculator use.
 - General Math – a 40 minute, 50 question test covering a variety of math topics, and requires not only skill but knowledge in math.
- **Math League**
 - Number Sense – same as TMSCA.
 - Sprint – a 40 minute, 30 question test covering a variety of math topics. It is similar to TMSCA's General Math.

- Target – a 24 minute, 8 question test split into 4 portions. The first set is 6 minutes for 2 problems, the second set is another 6 minutes for another 2 problems, and so on until the fourth set. This requires more accuracy than the other portions.
- MOEMS
 - A 30 minute, 5 question test covering a variety of math topics.
- AMC 8 (for 5th graders only)
 - A 40 minute, 25 question test covering a variety of math topics. This is usually harder than the other tests!

The main tests this year will be **TMSCA** and **Math League**.

§1.2 Pedagogy

Pedagogy just means my teaching philosophy. I think students learn best when they are first introduced **theory**, which means the formulas and ideas of a topic, then practice that theory through **problems**. In all of the tests listed above (and any other test you want to take), doing practice problems is key. What this means is **I expect the students to do work outside of the lessons**. This might mean practicing number sense tests, reading a math textbook – anything that will help you prepare for our competitions.

§1.3 ASE By-Laws

Please adhere by the by-laws. If you have questions regarding team selection or other rules, consult it first before asking me or Jefferson.

§1.4 Questions

If you have any questions, please ask your friends or family first (assuming they can answer it). If they cannot answer, or the question is directed at me, send me an email at dylanyu66@gmail.com. As long as you don't ask me too many questions, I will respond as soon as I can!