Brain Storm AutoMaths

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1 Background

TODO

2 Research Problem

Automate mathematics forming questions and answering them.

3 Ideas

1. generate a data set of questions of mathematics
2. we could frame it as a generation of questions. As a generative problem we could try methods that generate formal language/mathematics.
3. as a first benchmark method to compare everything that comes could be a GAN. Probably won't work great but its a benchmark. The idea is that it would learn from the data bank of mathematical question to form new mathematical questions. It would be nice if it made maths that actually made sense
4. one problem I've thought is that lots of maths includes natural language unfortunately, how to skip this issue? Is all the questions phrased essentially in a formal language?
5. whats the format for the questions? (language written, formal vs natural)
6. can we write the set of decidable problems in maths (to avoid the halting problem, that alpha go does NOT run into), for the formal/axiom system for it?
7. we can also collect the set of human relevant conjectures (cuz an arbitrary maths statement could just be a trivial conjecture...)
8. probably some relation to the sort of questions humans actually care about
9. fmri, mri brain stuff and its relations to language
10. cool links:

4 execution ideas

1. UROP project?
2. we could collect the data set
3. Can obsidean systems help?
4. MEng thesis

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