**Problem Solving Process**

1. What aspects do you think about when evaluating a problem?

- complexity level

- related formulas

- an example you remember

- common mistakes to avoid for this problem type

1. What are five common strategies used in math problem-solving?

- identifying problem type

- breaking the problem down into smaller problems

1. What are the steps you commonly use when solving a problem?
2. What priorities do mathematicians value when considering new theories?

- validity/logical consistency

- simplicity

- abstract impact

1. For what problem types do you find yourself combining modified versions of other solutions to form new solutions?
2. What's something that made you change your mind about how to solve a certain problem type?
3. What components are most useful in identifying problem types?

- input provided/output requested

- information left out

- level of complexity

- which formulas are intended to be understood in order to solve the problem

**Abstract Understanding**

1. How are the concepts of math organized? Can you draw a rough diagram linking the concepts?
2. What do people argue about in the field of mathematics?
3. What aspects, analysis, or applications of math cannot be automated?
4. What is the least intuitive thing you've learned about math?
5. What types of problems can math not solve?
6. What's one field or interest that helped you understand math better by reference/what fields has math helped you understand better?
7. Do you think there are absolute truths in math that could be applied to improve society in a soft-science (cultural/social/psychological) way?
8. What are some thought processes you run when learning a new math concept?
9. What do you consider success of a concept in math?

- Defying attempts to disprove it

- Triggering understanding of other concepts

- Applicability/usefulness

- Logical consistency with existing understanding

1. If you could make a formula about the relationship between math and one of your favorite concepts (the future, language, science, humanity, ideas, evolution, and so on) what might it look like?

Ex: math = (the limit of language as time t -> infinity ^ (conflicting incentives - (beliefs x culture)/memories)) x different resources

**Concrete Understanding**

1. What are five common and/or profitable applications of higher math in daily life, for those seeking an extra reason to study it?
2. What's an example of a time when you suddenly understood something about a problem type?
3. What do the best examples have in common when learning math?
4. What's one way of visualizing a math concept that stuck with you?

- visualizing algorithms as trees

- visualizing graphs as distorted perspectives

- visualizing functions as causal loops

- seeing a function as a pattern and the function's derivative as its cause

- visualizing functions as vectors leading to concepts

- visualizing graphs as reference points on a parent graph

1. What are some skills involved in understanding math?

- pattern-identification

- sorting

- organization

**The Future Of Math**

1. Is mathematical analysis being applied to the pattern & aspects of mathematical discoveries with respect to time?
2. Are the big discoveries in math altering or complying with the existing mathematical framework of understanding?
3. Do you think the reference points we are currently aware of in math (existing formulas, constants, and concepts) have much room to change?