

Applicant Instructions - Exploration Problems

National Math Camps and C&!

We've prepared three intriguing math problems for you to dig into. Take a look, pick one that grabs your interest, and dive in! Experiment, play with examples, and see what you discover. This is your chance to explore, so enjoy the process! We suggest spending about 2–3 hours total working on the problems and writing up your solutions.

Things to Remember:

- **Work independently:** These problems are meant to showcase your thinking, so work on them solo. Resist the urge to use ChatGPT, web searches, books, or ask others for help. Seriously — don't cheat! Sharing these problems online or with others isn't allowed either. We trust you, and we want to see your creative ideas!
- **Calculator? Optional!** You're welcome to use a basic four-function or scientific (non-graphing) calculator, but we don't expect it to be necessary. A pencil, paper, and your awesome brain should be enough.
- **Expect a challenge:** These problems are designed to make you think. You might not get everything right away (or at all), and that's totally fine! The later parts of the problems are especially tricky, so don't be discouraged if you don't solve every part. We're excited to see what you do figure out, even if it's just part of the problem.
- **Pick one or two problems to focus on:** You probably won't have time to solve all three, and that's okay. Pick one or two problems that look interesting to you and dive deep. If you feel like switching things up after about 1–2 hours, go ahead and try another problem!
- **Take a break if you need one:** Feel free to take a short break to refresh your mind—but remember, no Googling, asking for help, or sharing ideas about the problems during your break. Grab a snack, stretch, and come back ready to dive in again.

- **Document your thinking:** We love seeing how you approach problems! Write down all your work—your experiments, ideas, and even the dead ends. It’s especially helpful when you explain your thought process. For example:
 - First, I tried...
 - Then, I realized...
 - But that didn’t work because...
 - So next, I...
- **Label your final solution** Make sure to write up your final solution clearly and neatly so we can follow your reasoning. Pro tip: Start with “Final Solution:” to make it easy for us to spot your main conclusion.
- **Reflection time:** Before you finish, take a few minutes to answer the reflection questions. We want to hear about your experience working on the problems!

These problems are a taste of what we do at camp: exploring, experimenting, and discovering together. If you enjoy tackling these challenges, you’ll love the math adventures waiting for you at camp. We can’t wait to see what you come up with!