**Every person has a creative side, and it can be expressed in many ways: problem solving, original and innovative thinking, and artistically, to name a few. Describe how you express your creative side. (350 words)**

When my friends asked me to tutor them math, at first I only reviewed and restated what our teacher had taught us in school. However, they didn’t seem to understand my explanation. Despite repeating myself a couple times and thinking aloud and showing them how I solve word problems, they still couldn’t grasp the concept I shared. Thus, I must’ve been the problem, not them. I reflect on how I usually learn math. Personally, in learning difficult subjects I tend to use my creative thinking skill. By creating analogies, terminologies, etc to concepts, I am able to memorize and understand difficult subjects more easily.

So instead of following the basic teaching methods, I would crack my mind in search of creative ways to simplify concepts and materials like I always do when studying. I started by making simple short videos, using different props such as playing cards, coins, dice, and colored beads to make bracelets to explain the real life application of probability. By teaching my tutees through these applications, they start to open up and be more motivated in learning probability since they now know the application and its relevance.

Moreover, to help them memorize different formulas, I implemented game terminologies that my friends are familiar with, for example I connected the meaning of integrals to speed and velocity in racing games. Gradually, these methods helped my tutees to better analyze and solve problems, gaining improvements in scores by about 15%.

Through teaching, I realized that people have different perceptions of a problem. It may be easy for some but hard for others. I learned that we cannot presume a single solution to work for everyone, but instead understand their varying circumstances and use creativity to help people better understand what they are facing. In the future, I hope I can continue using my creative problem-solving thinking and willing heart to help others not only in the math field, but also assist them in their personal problems through daily conversations and interactions.

**Think about an academic subject that inspires you. Describe how you have furthered this interest inside and/or outside of the classroom. (350 words)**

(304 words)

Ever since I was little, I have always thought that efficiency is key to succeeding. That’s why my focus has always been in maximizing productivity. While researching some potential careers that are aligned with my interest, I found Industrial engineering which deals with optimizing productivity of a process or a system. Thus, I asked my father if I could visit his warehouse as he runs  a tire manufacturing company for Mitsubishi; I wanted to observe the assembly process and its efficiency. During my visit, I noticed how some stations had idle time and some processes were still manually done. The frequent late delivery resulting from the inefficient processes made me realize the significance of designing an optimal operations system.

In my quest to help my father, I implemented a reporting system to collect the data of each process for analysis. With those data, I used statistics to analyze the difference between the ordering lead time and production to find the optimal stock inventory to reduce the idle time. While my calculation was useful to pinpoint the problems, I was stuck when brainstorming how to optimize for the full production process.

In gaining more understanding in process optimization, I interned with the warehouse team of Mitsubishi Corporation, where I learned how to identify bottlenecks and experiment with creative solutions. I was mainly tasked with preparing orders and supply requests, but also helped synthesize insights on observations I made on product code accuracy, shipment scheduling, and delivery risk. I also rotated to the logistics department, where I noticed frequent inventory data discrepancies between the warehouse and management teams. So, I suggested an idea to create an automation of product labeling by connecting softwares to make order placing more accurate. I also argued that this method would speed up the process due to minimizing checking labor work. Despite being not tested yet, the proposal got submitted to the team development for the next cycle review. Although just for 2 weeks, my encounters with the various issues and exposure to a distribution warehouse have helped me understand the complexity of logistics, factors that come into play in improving process efficiency, and further developed my creative problem solving skills.

Inspired by how the iterative process directly contributes to operational improvement, I aspire to pursue industrial engineering to help my father’s company and others in the logistics and transportation industries.

**Beyond what has already been shared in your application, what do you believe makes you a strong candidate for admissions to the University of California? (350 words)**

When I look at the current world we live in, I see many untapped opportunities to improve the lives of everyday people. During the start of the pandemic, I saw on TV that the government is trying to ensure a continuing education for students in remote areas through virtual lessons. However, they lack access to the internet and electricity which makes it hard for them to actually attend these virtual meetings. So, for the past three years, I have been working on a solar-powered power bank, named PS2, suitable for people living in places with intermittent electricity. The end goal is to improve these population’s access to electronics so children can browse the internet and attend virtual lessons.

I was very focused on ensuring the quality of the product so it is long lasting and effective. Though I was confident with the product and have promoted it to varying communities, nobody was interested in buying my product. So I took a step back and revisited each and every feature of PS2 and reflected on the primary value proposition of this product. I researched the gross household income of some mountainous regions and islands in Indonesia, all remote places that I had hoped would have benefitted this solar-powered power bank, and discovered that at the present version, they will not be able to afford PS2. I had opted for fancy specifications such as fast charging, military-grade durability, and lightweight portability which made the cost of the prototype became too high. Had I spoken to my target audience, I would have known this earlier and not three years later.

From this experience, I realized that productivity and specifications are not the only key ingredients to changing the world through innovation. Taking time to observe, reflect, and converse with people is crucial to design a great product. To be a good engineer, I need to be humble, open-minded, and unafraid to ask questions to my target audience. Gathering more information to correct design misassumptions early is always better than fixing problems at the end. Many things in life, including failures, can unearth tiny revelations with the potential to yield large and positive impacts on society. The possibilities of improving are endless, and so are my passion and energy to do as such.

**What have you done to make your school or your community a better place? (350 words)**

(383 words)  
A Visit to my grandparents’ home town, a small village in Kalimantan, made me realize how privileged I am to be born and raised in the capital city of Indonesia. Many children of my age who live on a more remote island in Indonesia do not have access to proper education and healthcare. This has compelled me to volunteer with DoctorShare to provide healthcare and education to those living on a small island in Indonesia.

I volunteered to participate on a trip with Doctorhare to help people on a small island named Kei Island located in Maluku. The island was extremely remote, to get to the island in the first place, I had to take two planes, a car ride, and finally reach the island by boat. It was extremely tiring, but after arriving there I picked up my excitement and started doing what I had planned.

The project was to implement a plastic waste compactor, which can turn plastic waste to usable construction bricks, to help them with their waste management problems. But upon interacting and talking to people there, I realized that the main problem was the lack of knowledge they had on the importance of preserving the environment. People there are unaware of  the health issues that may arise from their natural habits of not caring about their health, especially for children. From a simple activity of washing their hands before eating, recycling, to refusing to get medical treatment when they are sick. So, I set up an event in schools with the goal of educating children how and why they need to take care of the environment in the hopes of improving the living conditions and hygiene of the people there.

Although I only had two weeks to educate those childrens on health and hygiene, I already could see the improvements in how they approach their daily activities. One major impact I saw was how after I held the event in a primary grade school, childrens started to seek cover when a heavy rain was pouring down. Whereas before, I could see childrens playing outside of their school even while it was raining.

Through this experience, I learned that seeing the bigger picture while taking into consideration other variables such as the people and the surrounding conditions is crucial in approaching any issue. The impact and the process to achieve a goal is as equally important as the goal itself. There are still many communities in Indonesia, especially those in the remote areas, that have a very low level of awareness on health and hygiene. This raised my interest to reach out to a larger community in Indonesia to bring awareness of health and hygiene which I will continue to work on in the future.