**4. Describe a problem you've solved or a problem you'd like to solve. It can be an intellectual challenge, a research query, an ethical dilemma - anything that is of personal importance, no matter the scale. Explain its significance to you and what steps you took or could be taken to identify a solution. (Maximum 650 words)**

Both of my parents are lawyers. And faithful to the stereotype, I spent my childhood listening to dinner-table conversations about arbitrations and depositions, cross examinations and hostile witnesses. I grew up living and breathing liberal arts, English, the science of argumentation and persuasion, and I’d be lying if I said this kind of upbringing has not had a major influence on who I am. I love to read, I’ve devoted a significant portion of my high school career to mock trial, and I’m an editor for my school newspaper.

And yet, despite my upbringing, I will never forget the moment I learned about gravity. Sophomore year, my physics teacher was standing at the front of the classroom. I was sitting in the front row, second seat from the door. He told us that gravity is the mutual attraction among all matter, a force beyond what keeps our feet on the ground. And absent any degree of urgency or awe, as if he were telling us that the homework was due Tuesday or that the sun sets in the evening, he told us that *no one knows why.* Gravity, the defining force of our universe, is a mystery.

I was fascinated. Beyond fascinated.

It was this revelation that piqued my interest in theoretical astrophysics. I decided to turn away from the humanities and delve into an education in the elusive STEM fields, a path uncharted in my family.

Gravity is the problem I intend to solve. At first glance, it may seem a simple concept, but as I began to immerse myself in the terminology and the breakthroughs, I discovered unexplainable complexity and nuances. In February of this year, I read about the proof of gravitational waves that rocked the world’s physics community. I remember learning the effects of gravity on the passage of time and the nature of a black hole ― not a hole at all, in fact, just a hyper-compressed mass of matter attracting more and more material into it over time, eventually absorbing even light into its depths.

Gravity manipulates time and space. In this way, it traverses the fourth dimension and interferes with, or perhaps defines, the space-time continuum, at least according to the theorizing done by Albert Einstein in his musings of time as a dimension itself.

This, of course, provides no answers, only more information to support conclusions. It is evident that science is not a method of proving anything true, rather, science strives to prove so many things false that we can safely assume the truth of something else. It follows then that the truth behind gravity, the ultimate why, will not be found via the scientific method, but instead through another form of inquiry: philosophy.

I state this rather weighty claim from a place of humility. It is an irony not lost on me that my opinion on a topic studied by some of the greatest minds in human history is no more than the opinion of a 17-year-old space nerd with a basic understanding of the physical world gleaned from public education, my own curiosity, and a crappy Internet connection.

Still, the more I think about it, the more sense it makes. In science, we can never know anything to absolute certainty. The same holds true in philosophy, where each theory or proposition seems to end in paradox or force the admission of unprovable truths.

I think we may soon find ― and it’s entirely possible that this is my liberal arts upbringing begging to be relevant ― that we will gain the deepest understanding of our universe by uniting science and spirit. Perhaps then we will find the underlying forces of the universe, and the mystery of gravity will cease to be. I intend to solve this problem of sorts in the course of my life, or darnit (I’ll avoid more choice language), I’ll die trying