**Verification:** This particular role did apply to me but in a very minimalistic way. I already knew that the theorem that I was working on is true. I just did not know the why behind it. I did start drawing graphs and trying to figure out why the theorem is true. I think this applies to me when I start working on my final proof presentation as part of my inductive process. Verification plays a much vital role when one does independent research and does not know the answer before hand.

**Explanation:** I think my proof for the theorem of Euler Paths and circuit had this role. As mentioned in the journal article, mathematicians value a new more elementary proof over something less intuitive and requires more concepts to be known. Because the proof has to be simple enough to understand but also should not lack rigor. I feel like my proof does exactly that. From all the books that I referenced to do this proof, they all lacked rigor, which led to lack of explanations to some parts of the proof. This was the part where I struggled the most in my proof. But now I know that I have all the necessary explanations in my version of the proof

**Systematization**: This particular feature is so much important in I think any “standard” proof. I feel having a flow in a proof is what makes a proof a proof. I had this particular feature in my proof as well. The reason why I say that is, I couldn’t have defined am Euler Path/Circuit without having a concrete definition of how we graph. More so, as a standard rule of thumb we have to define and name the players first. We cannot use *G* without stating that it is a graph. I think that the proof that I have now has a decent enough flow to it for someone read it and understand.

**Discovery:** I think my proof did not really have a lot of discovery component. I feel that my final project will have this component in much more than the presentation proof that I did. I think the little discovery that I had was with the part where I actually proceed with my induction. It was the part where I had to inductively traverse the edges in the sub-graphs.

**Intellectual challenge:** As the journal article mentions it, we prove our results because they are there. I agree that as a future Mathematician I enjoy the intellectual challenge of writing proofs, it is kind of a high that I get, not from the frustration in the moment but for what comes after it, a serene feeling of satisfaction. For me the most challenging part was to think how to add rigor to what I had in my mind. I had an image in my mind for the proof and why it is true. But the what was intellectually challenging to me was to put the ideas in my mind, on paper and making sure that it has rigor and it is true universally and not just because I want it to be.

**Communication:** So, I am taking an interpersonal communication course, and I cannot emphasize how important communication is between people, maybe in-person or using a proof to communicate our ides. This role also goes a little hand in hand with explanation. Because, how well you explain your proof highly depends on how well you communicate in your proof. I believe I have this in my proof. In my previous graph, I did have symbols to try to explain my thinking, but what I really was missing was actual sentences. Proper detailed sentences that are clear and concise and make sure that my proof is void of ambiguity. I think because of this role combining with explanation, I was able make sure that my proof is “air-tight”.