1) The paper by Warren S. Mcculloch And Walter Pitts named *A Logical Calculus of the Ideas Immanent in Nervous Activity* addresses the similarities between logic nets and the structure of the brain. Because nerves fire in a "all or nothing" manner, they can be likened to ones and zeros in a binary computer system. The proposition is that any neuron setup in the brain can be replicated as a similar perceptron to mimic the logic (OR, AND, NOR, etc). It is the first mathematical representation of a biological neuron.

2) In the paper, it's amazing that in 1943, they were able to see some basic functions that define ANNs today, which are weights, biases, and synaptic firing. They define these in terms like "neighboring synapses within the period of latent addition" (1). Despite the elevated use of large words and time difference of almost 80 years, the ideas that define AI are still present. I also like that they were the first to think of biological synapses as binary in a logic net system. This is something that now naturally makes sense to us, but to them probably seemed very robotic and over analytical.

   Something I found difficult was the choice of adjectives throughout the paper. Words like "refractoriness" (pg. 2), "immaterial", "functor" (pg. 4), just to name a few. It was extremely dense, especially in the calculus portion, that it overshadowed the understanding. Perhaps the reason for complexity is embody many different and intricate ideas in few words. It was difficult to understand the math. Some of the symbols in the math equations don't make any sense to me. This might be because of my lack of experience with set theory and discrete math. I believe equations and proofs like the ones seen in the paper are more common in those types of diciplines.

3) Starting with the 5 rules of the paper's theory, I agree with points 1, 2, 3, and partly 4. In biological systems, the nervous system is all or nothing. However, in computer systems, the perceptron can be treated as a real number between 0 and 1, which then it is not only an integer. Also, the threshold is something I agree with because if there was no threshold to activity, then a neuron would constantly fire without stimuli and wouldn't give any useful information when it fires for nothing and everything. The reason I do not agree with 4 and 5 is because the biological parts of a person's brain can change over time. This might go beyond the scope of this paper because once another synapse connection is made, the system is essentially different. Additionally, an inhibitive synapse might only relatively suppress the firing/ not firing of a synapse. This means that an inhibitive synapse might only raise the threshold of the synapse which in that case, more positive synapses need to be received in order to overcome the inhibitive synapse.

4) Something inspiring that I found in the paper is that very complex things like the brain can be broken down into understandable events. It baffles me that seemingly random connections between 10^{11} neurons generate peoples' consciences, personalities, body functions, and memories. I wonder if that it can be possible to copy someone's entire brain if their neurons can be completely mapped. It would seem that it should be possible in theory, but something tells me that there is something extra that humans possess which would make that impossible. This idea borders on the idea of movies like *Transcendence* and *A Space Odyssey*.