Bradley White
CSCI 338
HW #8
4/22/2016

1.
Yes

2.
Yes

3.
Yes

4.
CSCI 338 provides alternative ways to think about computation and how problems can be solved with a computer. It allows us to determine how difficult a problem can be to solve and how to formally classify these problems. Knowing these attributes about a problem allows us to approach finding a solution in the best manner. If we have found a solution it is imperative that we can determine the time complexity to understand if the solution to the problem can be computed in a reasonable amount of time.

5.
I found section three to be the most intriguing when Aaronson makes the connection between philosophy and theoretical computer science by presenting examples of the polynomial/exponential gap. Not only does it present a connection to philosophy, but also to many other disciplines and indicates how important computer science is to the advancement of human knowledge and our understanding of the universe. Particularly, the theory of evolvability and modeling the speed of evolution within simulations is something that had not crossed my mind previously. It was captivating because a computer scientist would seemingly not pursue such a problem and any solution would be difficult to determine.

Additionally, Aaronson's postulations about a computer that *could* pass the Turing Test is enlightening because most conversations simply state why such a computer could never exist. Thinking about the size of the program and resources required to even pass the Turing Test with a lookup table is staggering, at least by today's standards. Furthermore, he even states "the fundamental obstacle to computers passing the Turing Test, then it is not to be found in computability theory." Which shows us to solve some problems in computer science, maybe even if $P \neq NP$ or $P = NP$, we will have to go beyond our common computational knowledge and search diverse areas, perhaps philosophy.