

1. Answers for System, Model, and Simulation:

- a. My understanding of a system is that it has an infinite number of subsystems while it itself is a subsystem of a larger system as well. Each subsystem in a system works together to keep the system alive and each one of those subsystems has many subsystems that work together to keep that subsystem alive and contributing to the current system.
- b. A system is a large and infinite system of subsystems and a model is a comprehensible and manageable miniaturized version of a that system. A simulation is something that is produced from that model for humans to try and understand what is happening inside of the system we are trying to simulate.

2. Answer for Emergence:

- a. Emergence in my understanding is that it is all around us. If I was to say that **bees** are a system and **flowers** are a system, then the Emergence from these two systems is **honey**. By themselves they produce nothing but when they work together, honey emerges. I think Emergence is an important part of a system because a system might need this emerging system to function just like bees need their honey.

3. Answers for Verification and Validation:

- a. **Verification:** Would be verifying that our model is simulating without errors and the calculations are working properly.
- b. **Validation:** Would be the testing groups validating that we are in fact modeling the impacts of Self-Driven cars on accident rates and that they would decrease them like we hoped it would.