1 a. An entity is something that causes a change in the state of the simulation, and has attributes that are unique to itself.

1 b. (Depends on the level of complexity you want to model).

* Drive Through: Length, Current number of cars, Full or not
* Car: Length
* Customer: Order, Decision to get in line, Waiting
* Menu Board: Availability
* Order: Contents, Ready, Cost, Preparation time
* Kitchen: Number of orders, Number of cooks, Availability of equipment
* Cook: Availability, Preparation speed
* Pickup Window: Availability
* Order Taker: Availability

1 c.

* People
* Elevators

2 a. Resources are anything that has a restricted or constrained capacity.

2 b.

* Elevator Capacity
* Number of Elevators

3 a. A delay is a wait for a definite period of time while a queue is a wait for an unspecified period of time.

3 b. The time taken to travel from one floor to the next.

3 c. The wait for the elevator to arrive with spare capacity.

3 d.

* The elevator arrives at a floor.
* The elevator leaves a floor.
* A space is freed on the elevator.

4 a. An event that is scheduled to occur in the future.

4 b. The time that the event will occur.

4 c. No, because the clock in the simulation is incremented by the event time, and the current time will not go back to a previous event.

4 b. Person(1), Arrive at Floor, 12:00:05 PM

5 a. Count of the total entities.

6 a.

Int dice1 = random.next(6);

Int dice2 = random.next(6);

6 b. If person is currently on ground floor then generate a random number corresponding to a floor. If the person is not on the ground floor, then generate a random number corresponding to the probability that they will want the ground floor. If they don’t want to go to the ground floor, then generate another random number for the floor they want to go to, discounting their current floor.

7 a.

* The frequency that people want to use the elevators.
* The speed of the elevators.
* The amount of people an elevator can hold.