Question 1

Yes, it is possible to run the simulation without explicitly stating the number of 'CelestialBody' objects at the beginning of the data files. The size of the array of CelestialBody objects can be determined while reading the file. We could initialize and implement an ArrayList to store the CelestialBody objects and add elements as they are read from the file. In the end the Arraylist can be changed to an array to read the correct size.

Question 2

Per each time step, the iteration is called exactly n times ; counting from the $k=0^{th}$ body to the k=n-1th body. In each time step, the method is called for each celestial body in a loop whose total number of iterations is the total number of bodies from bodies.length

Question 3

In terms of total time and dt, there are totalTime/dt time = (1577.88) steps and this is because totalTime represents the total time to run the simulation whereas dt is the time per timestep. Increasing dt therefore reduces the total number of timesteps and thus reduce accuracy of the simulation as it is a less exemplary representation of the system's behavior.

Question 4

The large increase in dt causes the simulation to run faster, implying that the simulation takes larger and lesser time steps, and thus causing inconsistencies relative to expected behavior.

Question 5

The article discusses efforts made by researchers to make data visualization accessible for blind and low-vision individuals who use screen readers; they made prototypes that enable these screen reader users to navigate through multiple layers of information for charts efficiently. The goal is to create a software tool that converts visualizations into accessible formats, possibly audio while considering usability. In the grand scheme of things, they intend to contribute to rethinking web accessibility standards.

Just as stated above, my code/project could include auditory representations of the motion of the celestial bodies. This could include a voice over to convey information about the velocity, position and forces of the bodies under interaction. Additionally, textual descriptions could be incorporated.

Question 6

Yes, I submitted the URL for a Zoom recording.