**Problem 2:**

A earth with a network of lines and points

Description automatically generated with medium confidence

A map of the world

Description automatically generated

i-vi)

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| --- | --- | --- |
| **Parameter** | **Values** | **Units** |
| Radius at closest approach or Rad. Peri. | 18000 | km |
| Radius at farthest excursion or Rad. Apo. | 102000 | km |
| Energy | -3.321670346 | km^2/s^2 |
| Semi-major axis | 60000 | km |
| Semi-latus rectum | 30600 | km |
| Angular momentum magnitude | 110440.8145 | km^2/s |
| Cartesian X | 60339.78352 | km |
| Cartesian Y | -60624.8747 | km |
| Cartesian Z | 55567.39235 | km |
| Cartesian X Velocity | 0.123519703 | km/s |
| Cartesian Y Velocity | 0.791054225 | km/s |
| Cartesian Z Velocity | 0.728924094 | km/s |

The cartesian position and velocities are associated with the **EarthMJ2000Eq** reference frame, which is an Earth equator inertial system. The units are given in the table above. Raw data is shown in an attached .txt file.

A screen shot of a computer generated image

Description automatically generated

**Figure 1: e = 0.7, a = 40,000 km, 60,000 km, 75,000 km**

A screen shot of a computer generated image

Description automatically generated

**Figure 2 : a = 60,000 km, e = 0.2, 0.65, 0.88**

A screen shot of a video game

Description automatically generated

**Figure 3: e = 0.65, a = 20,000 km, 35,000 km, 75,000 km**