assignment 3

The details to solving this assignment have changed. See your course web site for updated information.

1. A satellite is moving in a circular orbit at a distance of 500 km above the Earth. The semi-major axis of the orbit is 6,700,000 km. The period of the orbit is 2.55 hours. What is the total mass of the Earth-Sun system? (Assume the Earth is a perfect sphere.)

2. A satellite is orbiting the Earth in a circular orbit at an altitude of 600 km above the Earth's surface. The satellite is orbiting the Earth every 2 hours. What is the radius of the orbit? (Assume the Earth is a perfect sphere.)

3. A satellite is orbiting the Earth in a circular orbit at an altitude of 600 km above the Earth's surface. The satellite is orbiting the Earth every 2 hours. What is the period of the orbit? (Assume the Earth is a perfect sphere.)

4. A satellite is orbiting the Earth in a circular orbit at an altitude of 600 km above the Earth's surface. The satellite is orbiting the Earth every 2 hours. What is the speed of the satellite? (Assume the Earth is a perfect sphere.)

5. A satellite is orbiting the Earth in a circular orbit at an altitude of 600 km above the Earth's surface. The satellite is orbiting the Earth every 2 hours. What is the orbital velocity of the satellite? (Assume the Earth is a perfect sphere.)

6. A satellite is orbiting the Earth in a circular orbit at an altitude of 600 km above the Earth's surface. The satellite is orbiting the Earth every 2 hours. What is the period of the orbit? (Assume the Earth is a perfect sphere.)

7. A satellite is orbiting the Earth in a circular orbit at an altitude of 600 km above the Earth's surface. The satellite is orbiting the Earth every 2 hours. What is the semi-major axis of the orbit? (Assume the Earth is a perfect sphere.)

8. A satellite is orbiting the Earth in a circular orbit at an altitude of 600 km above the Earth's surface. The satellite is orbiting the Earth every 2 hours. What is the eccentricity of the orbit? (Assume the Earth is a perfect sphere.)

9. A satellite is orbiting the Earth in a circular orbit at an altitude of 600 km above the Earth's surface. The satellite is orbiting the Earth every 2 hours. What is the inclination of the orbit? (Assume the Earth is a perfect sphere.)

10. A satellite is orbiting the Earth in a circular orbit at an altitude of 600 km above the Earth's surface. The satellite is orbiting the Earth every 2 hours. What is the right ascension of the ascending node? (Assume the Earth is a perfect sphere.)

11. A satellite is orbiting the Earth in a circular orbit at an altitude of 600 km above the Earth's surface. The satellite is orbiting the Earth every 2 hours. What is the argument of perigee? (Assume the Earth is a perfect sphere.)

12. A satellite is orbiting the Earth in a circular orbit at an altitude of 600 km above the Earth's surface. The satellite is orbiting the Earth every 2 hours. What is the mean anomaly at the start of the orbit? (Assume the Earth is a perfect sphere.)

13. A satellite is orbiting the Earth in a circular orbit at an altitude of 600 km above the Earth's surface. The satellite is orbiting the Earth every 2 hours. What is the true anomaly of the satellite at the start of the orbit? (Assume the Earth is a perfect sphere.)

14. A satellite is orbiting the Earth in a circular orbit at an altitude of 600 km above the Earth's surface. The satellite is orbiting the Earth every 2 hours. What is the semi-major axis of the orbit? (Assume the Earth is a perfect sphere.)

15. A satellite is orbiting the Earth in a circular orbit at an altitude of 600 km above the Earth's surface. The satellite is orbiting the Earth every 2 hours. What is the eccentricity of the orbit? (Assume the Earth is a perfect sphere.)

16. A satellite is orbiting the Earth in a circular orbit at an altitude of 600 km above the Earth's surface. The satellite is orbiting the Earth every 2 hours. What is the inclination of the orbit? (Assume the Earth is a perfect sphere.)

17. A satellite is orbiting the Earth in a circular orbit at an altitude of 600 km above the Earth's surface. The satellite is orbiting the Earth every 2 hours. What is the right ascension of the ascending node? (Assume the Earth is a perfect sphere.)

18. A satellite is orbiting the Earth in a circular orbit at an altitude of 600 km above the Earth's surface. The satellite is orbiting the Earth every 2 hours. What is the argument of perigee? (Assume the Earth is a perfect sphere.)

19. A satellite is orbiting the Earth in a circular orbit at an altitude of 600 km above the Earth's surface. The satellite is orbiting the Earth every 2 hours. What is the mean anomaly at the start of the orbit? (Assume the Earth is a perfect sphere.)

20. A satellite is orbiting the Earth in a circular orbit at an altitude of 600 km above the Earth's surface. The satellite is orbiting the Earth every 2 hours. What is the true anomaly of the satellite at the start of the orbit? (Assume the Earth is a perfect sphere.)

Due on: 2023-10-27, 23:00:00