

Math 388 Exercises

Instructions: due Tuesday.

1. Work T2.9 on page 81.
2. Work problem 2.5 on page 98.
3. Work problem 2.7 on page 98.
4. Work T3.6 on page 117.

Read pages 46-48 and Lab Visit 2 on page 99 and answer the following questions.

5. If the three-body problem was solved before 1900, why is it considered hard?
6. Which planet has been shown to have sensitive dependence on initial conditions? Does this mean that its orbit is impossible to predict?
7. Briefly describe what numerical experiments suggested about the obliquity of Mars? Could this have any significance in the debate about whether life ever existed on Mars?
8. How was sensitive dependence used to precisely steer a satellite from a position between the sun and earth to cross the tail of a comet? Isn't it a logical contradiction to say that the existence of sensitive dependence could be used for precise control?