Work exercises 43 and 44 from section 32 of the textbook (pg. 359-360).
Specifically, you need to:

- Show that the total energy required to fly from B to L is given by the expression for E that is listed in exercise 43.
- Find the expression for the total time T it takes to fly from B to L.
- Show that the value of θ that minimizes E is given by the expression in exercise 44.

In addition:

- Find the expression for the angle θ that minimizes the amount of time it takes to fly from B to L. (i.e. the angle that minimizes T)
- Find and simplify the expression for the minimum energy required to fly from B to L. (i.e. plug the expression for θ that minimizes E into the expression for E and then simplify)
- Find and simplify the expression for the minimum time required to fly from B to L. (i.e. plug the expression for θ that minimizes T into the expression for T and then simplify)

Grading:
3 points are possible for each of the bullet points above for a maximum of 18 points.
You must show full work to receive any credit. You are encouraged but not required to use Maple. Your solutions (and Maple work, if applicable) must be neat, clear, and easy to follow.
You may work with others, but each student must hand in her or his own work, and you must identify all other students you worked with.
Any extra credit points you receive will be added to your overall point total for the course. Since there are 1000 points available for the course, this extra credit could increase your grade in the class by up to 1.8%.

Due Date: Friday, December 8, 2006