Reading Assignment 3

"The Whole Iguana" by *Rodney Brooks*
"Shakey the Robot" by *Nils Nilsson*
Due: *Wednesday, February 17th, 1999*

The following questions are intended to stimulate your understanding of the assigned reading material. Many of them have no "right" and "wrong" answers.

1. Write a subsumption layer for a "seek light" behavior. Incorporate it into the layers in Figure 11.4 of "The Whole Iguana".

2. Brooks argues against Shakey's "closed world assumption". What is this assumption, and how does Brooks claim that his approach gets around it? Is he making any assumptions of his own?

3. Shakey uses predicate calculus to model its environment. What problems might this cause for a robot in a more complex, unaltered environment. Can you think of a way to alleviate these problems?

4. Shakey uses STRIPS to plan actions. Can you think of some arguments against using a complex planning system on a robot? Arguments for it? Shakey had access to a PDP-10 and PDP-15 computer for all of its computation. How much does the increased speed and memory capacity of present hardware change your arguments?

5. What are the main differences between Brooks' subsumption architecture and the approach used in Shakey? Do you think that one is inherently better than the other?

6. Brooks refers to the Shakey project as a "misguided disaster". What are his reasons for saying this? Do you think that they are valid?

Extra Credit

7. Who are the robots Tom, Jerry, Allen, Herbert and Seymour named for?