

Math 141 Honors Problems #2

Due date: Tuesday, 9/1/09

**HP3 [3 points]** Let  $P(t)$  be the following function: if  $t$  is the elapsed time (in seconds) since January 1, 2009, 12:01 AM CST, then  $P(t)$  is the temperature (in degrees Fahrenheit) at the top of the Campanile. Using climate data from Wikipedia, which we'll assume is reasonably accurate for the sake of the problem, come up with a reasonable model for  $P(t)$ . Your model should keep track both of changes in temperature from season to season, as well as of changes over the course of a single day.

**HP4 [3 points]** Do as much as you want to of the "Laboratory Project" on hypocycloids and/or epicycloids on p. 82 of the textbook.