Math 131
September 30, 2000
Montgomery Quiz 3 Sec._____

1. The tide in Mayberry averages about 5 feet above sea level, and periodically oscillates from 1 foot to 9 feet, with a period of (about) 12 hours. At 4pm, the tide is at 5ft. and increasing. Find an equation that reasonably models the height of the tide at time t, where t is measured in hours, starting with t=0 at 4pm. What is the amplitude of this model? When is the next high tide?

2. The temperature T (in degrees Fahrenheit) at time t (in hours) in a freezer is given by the equation $T = 4 \cos t$. Using intervals of length .001 and .0001, estimate the rate of change of the temperature when $t = 1$. (Make sure your calculator is in radian mode.)