Math 121 **Quiz #10** **Fall 2008**

p. 633: 11. (20 pts) In the past, the average length of stay of tourists in a city's hotels has been 3.1 nights. A new marketing campaign to promote the attractiveness of the city has been in place for the last two months. An analyst is to test whether the new campaign has increased tourism. The analyst obtained a random sample of the number of nights spent by tourists in the city's hotels after the campaign started.

8 4 6 2 3 5 1 2 3 4 7 3

We wish to assess whether there is enough evidence to conclude that the mean number of nights spent at a hotel is higher than 3.1 (that is, we wish to test the hypotheses $H_0 : \mu = 3.1$ versus $H_1 : \mu > 3.1$).

(a) (4 pts) For the test to be valid, the number of nights spent by tourists at hotels is assumed to follow an approximately normal distribution. Make a QQ plot or histogram to assess if this assumption is reasonable.

(b) (8 pts) Give the value of the test statistic and the corresponding p-value for the test.

(c) (4 pts) What is your decision using a significance level of 10%?

(d) (4 pts) Could you have made a mistake? If so, what type of mistake could you have made?