

Your Name: \_\_\_\_\_

**Math 140: Statistics, April 24, 2008**  
**Quiz 17, Chapter 26: Tests of Significance**

1. (12 pts.) A gambler asserts that a die is biased, that it lands showing a one too often. He rolls the die 100 times and it shows one 21 times.
  - a) Is this a *counting/sum* experiment or an *average* experiment? What is the *box model* for the *null hypothesis*?
  - b) Briefly state the *null* and *alternative hypothesis*.
  - c) Based on the null hypothesis, what is the expected value for 100 rolls?
  - d) Estimate the *SD* and appropriate *SE*.
  - e) Calculate the *z-statistic* for the experiment.
  - f) Calculate the *P-value* for the experiment. What do you conclude?
  
2. (6 pts.) The null hypothesis is that the average value of cards in a box is 50; the alternative hypothesis is that the average is greater than 50. For 100 draws, the observed average was 53.5 with an SD of 20. Calculate the *z-statistic* and *P-value*. What do you conclude?

Pledged: \_\_\_\_\_