

Name:

Math 10a
December 3, 2014
Quiz #10

1. (2 points) Let X be the number of heads in ten flips of a fair coin. What is $P(4 \leq X \leq 6)$?

2. (4 points) Let's model the number of free throw attempts before Shaquille O'Neal makes a free throw (where 1 attempt will mean he makes it the first time). The chance it takes him precisely k attempts is given by

$$p(1 - p)^{k-1}.$$

If in different games it takes him 3, 3, 1, 1, 2, 5, 2, 1, 1, and 3 attempts to make a free throw, what is the maximum likelihood estimate for p ?

3. (4 points) You suspect a *ten-sided* die is weighted to land more often on 1 than on the other numbers. To test your suspicions, you roll the die 400 times and it lands on 1 fifty of those times.

Using a significance level of $\alpha = .01$, do you have evidence to back up your suspicions?