Math 119   Name: _____

QUIZ 3 (CHAPTER 6)
MATH 119 – FALL 2012 – KUNIYUKI
105 POINTS TOTAL, BUT 100 POINTS = 100%
Show all work, simplify as appropriate, and use "good form and procedure" (as in class).
Box in your final answers!
No notes or books allowed. A scientific calculator is allowed.

• You may detach the attached tables and write on them, but turn them in with your test. Nothing you write on the tables will be graded.

• Round off z scores to 2 decimal places; otherwise, write exact answers or round off calculations to at least four decimal places or at least four significant digits, whichever is more convenient.

1) (2 points). What is the mean of the standard normal distribution?

2) (2 points). What is the standard deviation of the standard normal distribution?

3) (6 points total). The test scores of the students in a class have a mean of 50 points and a standard deviation of 10 points.

    a) If Student X scored 70 points on the test, what is that student's z score?

    b) If Student Y has a z score of 3.00, what is that student's test score?

4) (38 points total). The test scores for a very large lecture class are approximately normally distributed with a mean of 62.5 points and a standard deviation of 12.4 points. Do <u>not</u> use continuity corrections for these problems.

    a) What <u>percent</u> of the test scores are higher than 80.0 points? These people will get "A"s. Write your answer to the nearest hundredth (that is, to two decimal places) of a percent. (10 points)

<u>Reminder</u>: The test scores for a very large lecture class are approximately normally distributed with a mean of 62.5 points and a standard deviation of 12.4 points. Do <u>not</u> use continuity corrections for these problems.

b) What <u>percent</u> of the test scores are between 50.0 points and 65.0 points? These people will get "C"s. Write your answer to the nearest hundredth of a percent. (16 points)

c) The students who scored in the bottom 4% of the class will get "F"s, and only those students. Find the cutoff score for an "F." Round off your answer to the nearest point. (12 points)

IN THE FOLLOWING PROBLEMS, WRITE YOUR ANSWERS OUT TO FOUR DECIMAL PLACES.

5) (34 points total). The numbers of Krusty-O bits in Krusty-O cereal boxes are approximately normally distributed with mean 345.0 cereal bits and standard deviation 7.3 bits. Do <u>not</u> use continuity corrections for these problems.

    a) Find the probability that a randomly selected Krusty-O cereal box has between 340.0 and 350.0 cereal bits. (15 points)

    b) If 14 Krusty-O cereal boxes are randomly selected, what is the probability that their average number of cereal bits per box is between 340.0 bits and 350.0 bits? (19 points)

6) (23 points). According to a poll, about 37% of registered voters in a state approve of Senator Smith. Let's say 250 registered voters in the state are randomly selected. Based on the poll results, find the probability that fewer than 75 of those selected voters approve of Senator Smith. Use a normal approximation to a binomial distribution, and use a continuity correction. Show why the normal approximation is appropriate based on the rules given in class.