ICMA151 Statistics for Science I

Name: _____ **ID:** _____

Quiz 3 (5%) 40 Points (10 points each)

Problem

1. A quiz consists of 15 multiple choice questions. Each question has 5 choices, with exactly one correct choice. A student, totally unprepared for the quiz, guesses on each of the 15 questions.

   How many questions should the student expect to answer correctly?

   _____

   What is the standard deviation of the number of questions answered correctly?

   _____

   If at least 9 questions must be answered correctly to pass the quiz, what is the chance the student passes?

   _____

2. The number of telephone calls coming into a business' switchboard averages 4 calls per minute. Let x be the number of calls received.

   Find P(x = 0).

   _____

   What is the probability there will be at least one call in a given one-minute period?

   _____

   What is the probability at least one call will be received in a given two-minute period?

   _____

3. The lifespan of salmon flies is normally distributed with a mean of 60 days and a standard deviation of 20 days.

   What percentage of a salmon fly population lives less than 12 days?

   _____

   What percentage of a salmon fly population lives between 80 and 101 days?

   _____

   Find the value x_0 such that 6.3% of a salmon fly population live less than x_0 days.

   _____

4. Calculating the following probabilies and indicate which probability distribution model is appropriate in each
   case. A very good darts player can hit the bull's eye (red circle in the center of the dart board) 75% of the
   time. What is the probability that he
   (a) hits the bulleye for the 14th time on the 20th try?
   (b) hits the bulleye 14 times in 20 tries?
   (c) hits the first bulleye on the forth try?