

Answer the following questions about two Binomial probability experiments:

- I. A multiple choice test has 10 questions. Each question has four answer choices. What is the probability that a student, choosing answers at random:
 - a. Gets 7 question correct (exactly 7).
 - b. Has at least one question correct?
 - c. Has at least 3 questions correct?
 - d. Has at most 1 question correct?
 - e. Has at most 4 questions correct?
 - f. Has all questions correct?
 - g. Has all questions wrong?
 - h. What is the mean number of correct questions the student may expect?
 - i. What is the standard deviation of the variable "number of questions correct"?
 - j. What is the minimum and maximum usual values of correct questions the student may expect?
 - k. May we consider 6 as a usual number of correct questions under the conditions of this experiment?

- II. A shooter hits the target 70% of the time. Today he will shoot 6 times. What is the probability that:
 - a. He hits the target at least once?
 - b. The probability that the shooter misses all six shots is 0.000729. Verify this calculation and comment about the assumption of the shooting accuracy of 70%.
 - c. He hits the target at least three times?
 - d. He hits the target at most 2 times?
 - e. What is the mean number of hits he may expect?
 - f. What are the minimum and maximum usual values of hits the shooter may expect?