

Seminar 18

1. On the average a certain intersection results in 3 traffic accidents per month. What is the probability that in any given month at this intersection
 - a) exactly 5 accidents will occur?
 - b) less than 3 accidents will occur?
 - c) at least 2 accidents will occur?

2. The probability that a person dies from a certain respiratory infection is 0.002. Find the probability that fewer than 5 of the next 2000 infected will die.

3.
 - a) Find the mean and variance in Question 2 of the random variable X representing the number of persons among 2000 that die from the respiratory infection.

 - b) According to Chebyshev's Theorem, there is a probability of $3/4$ that the number of persons to die among 2000 persons infected will fall within what interval?

4. A restaurant prepares a tossed salad containing on the average 5 vegetables. Find the probability that the salad contains more than 5 vegetables
 - a) on a given day;
 - b) on 3 of the next 4 days.

5. Suppose that on the average 1 person in 1000 makes a numerical error in preparing his or her income tax return. If 4,000 forms are selected at random and examined, find the probability that 6, 7, or 8 of the form will be in error.