

1. The number of flaws on a computer tape has a Poission distribution with the average number of flaws being 1 every foot.
 - (a) What is the pmf for the number of flaws in 1.5 feet?
 - (b) What is the probability that there are more than three flaws in 1.5 feet?

2. Suppose there are 10 defective items in a lot of 40 items. A sample of 9 is taken at random without replacement. Find
 - (a) find the pmf associated with this experiment;
 - (b) the probability that the sample contains at most 1 defective item;

3. Suppose there are 15 defective items in a lot of 45 items. A item is selected examined then put back in the lot. Suppose that items are drawn until four defective items are found. Find
 - (a) the pmf associated with this experiment;
 - (b) the probability that at least five selections are needed;
 - (c) what is the average number of selections needed to find the four defective items?

- 4 Determine the constant c so that $f(x)$ satisfies the conditions of a p.d.f. for a random variable X . If $f(x) = cx^{\frac{3}{2}}$, $0 \leq x \leq 2$,
 - (a) find c so that f is a pdf;
 - (b) find $P(1 \leq X < 1.5)$;
 - (c) find $P(X \leq .5)$.

- 5 Problem 70 in section 3 of the text.