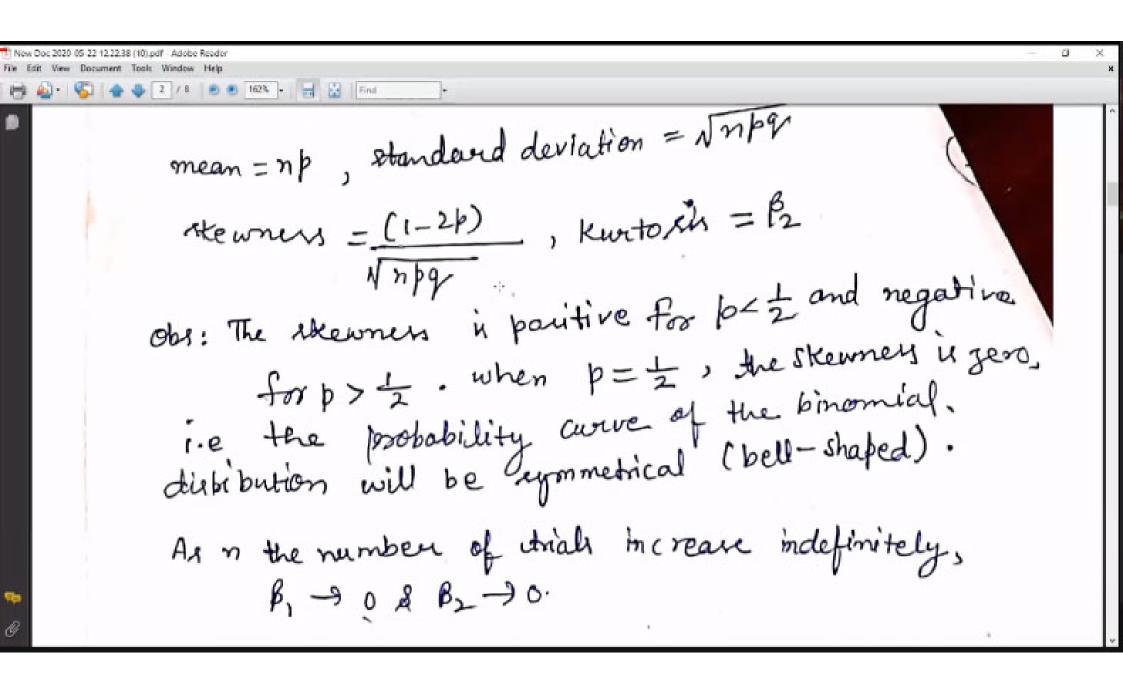
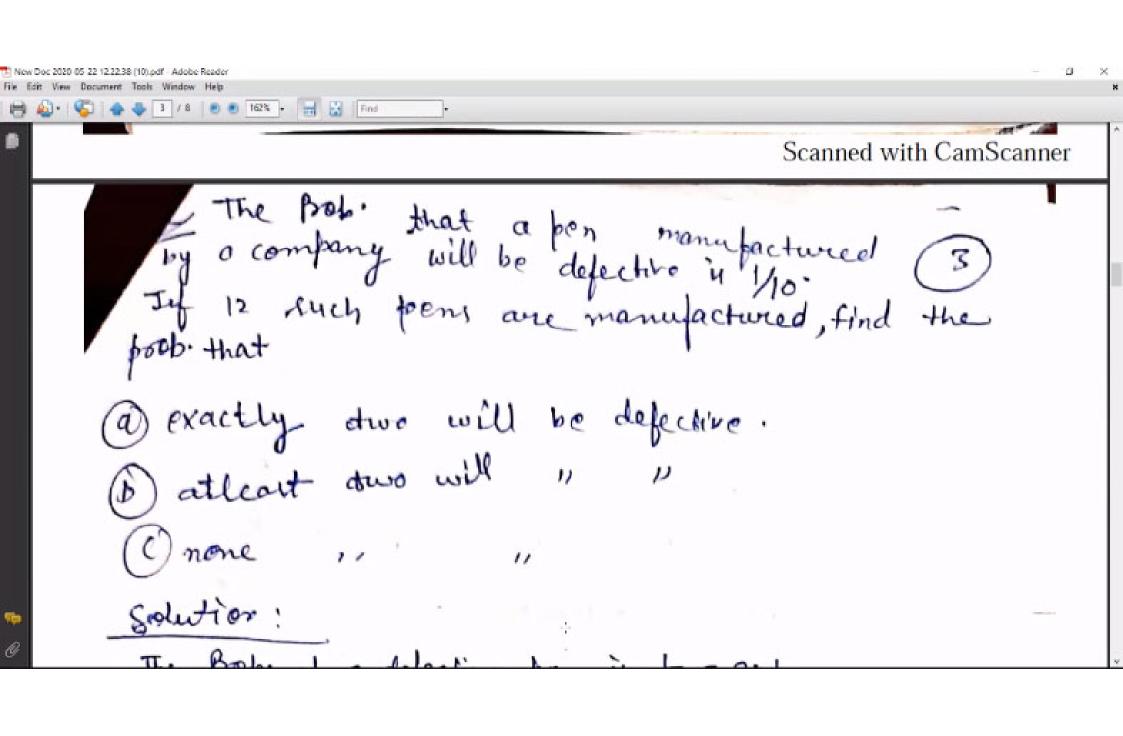
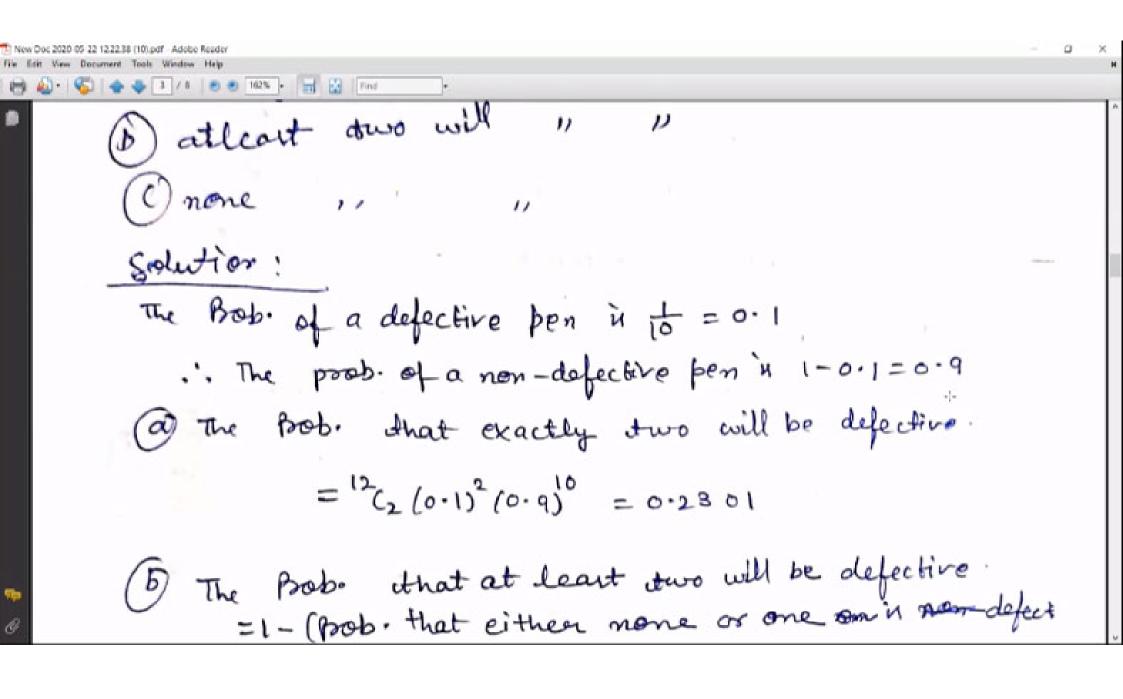


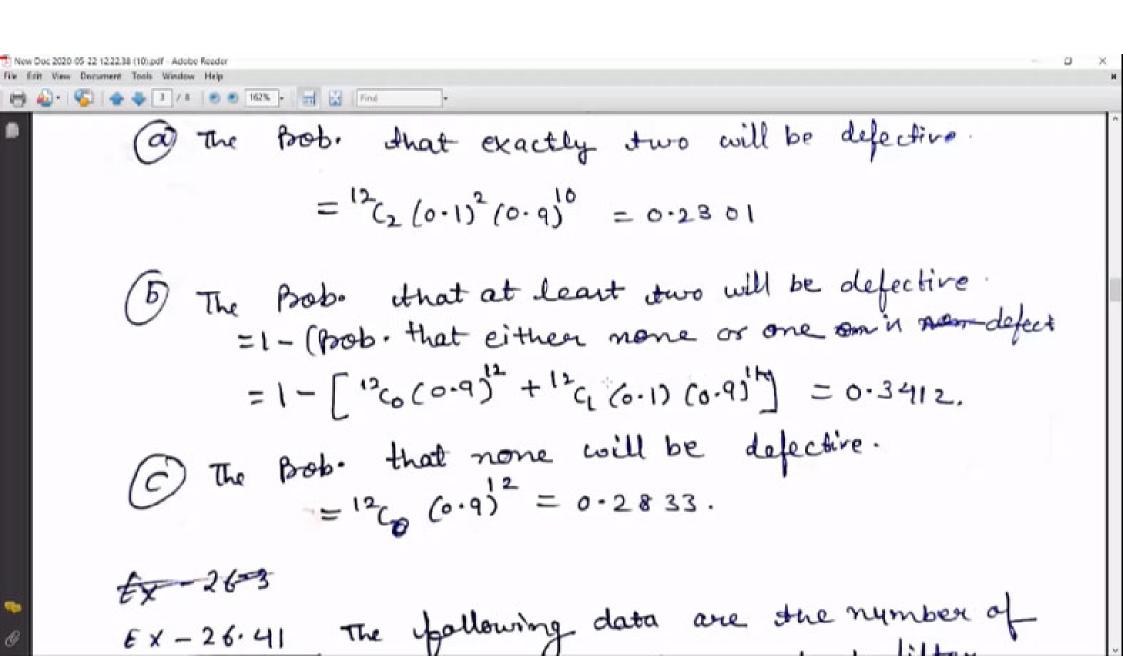
and 9 that of a failure, then the prob of or successes in a review of a strictle is given by 1 p 9 - 31 where or takes any integral value from 0 to n. The probabilities of 0,1,2, - , or, successes are, therefore given by  $q^{n}, \, n(, p \, q^{n-1}, \, n(2p^{2}q^{n-2}, --, n(2p^{2}q^{n-3}, --))$ The prob. of the number of successes so obtained in File Edit View Document Tools Window Help movemen are, therefore given by The prob. of the number of successes so obtained in called the binomial distribution - for the simple Heron Meanon that the probabilities are the successive itemy in the expansion of the binomial .. The sum of the procb.

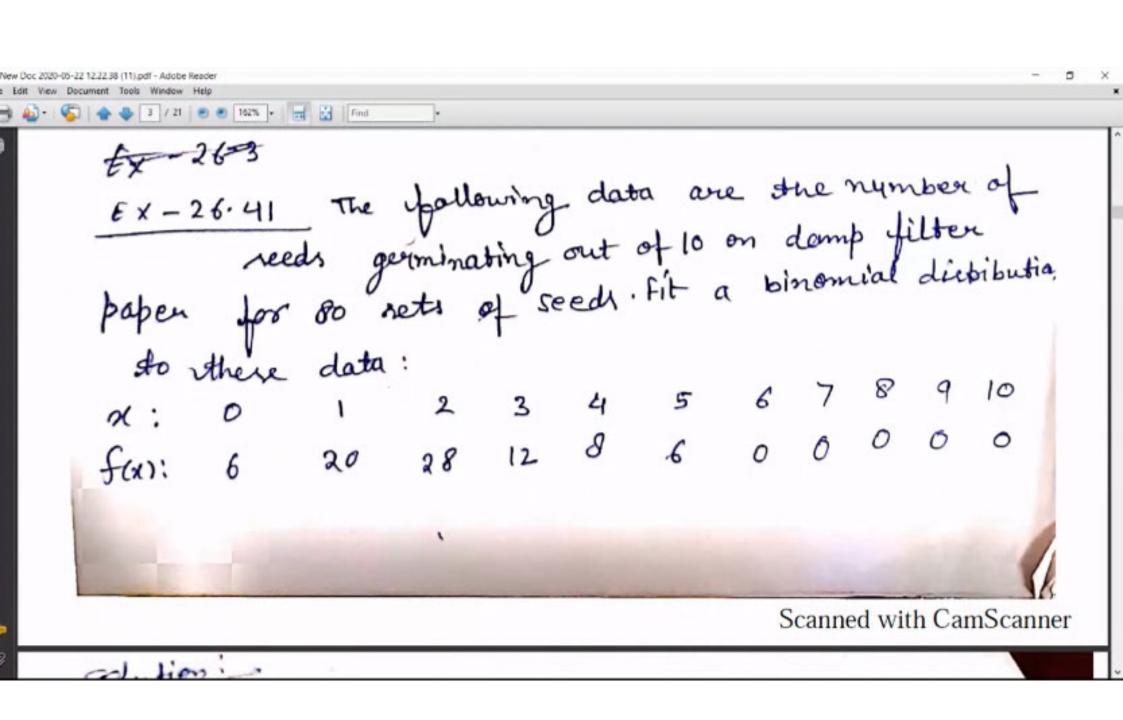


File Edit View Document Tools Window Help (4) Application of Binomial distribution: This distribution is applied to problems concerning. Downbeer of defectives in a sample from production ii) Extimation of outlability of system, hitting a starget. Radeu detection.

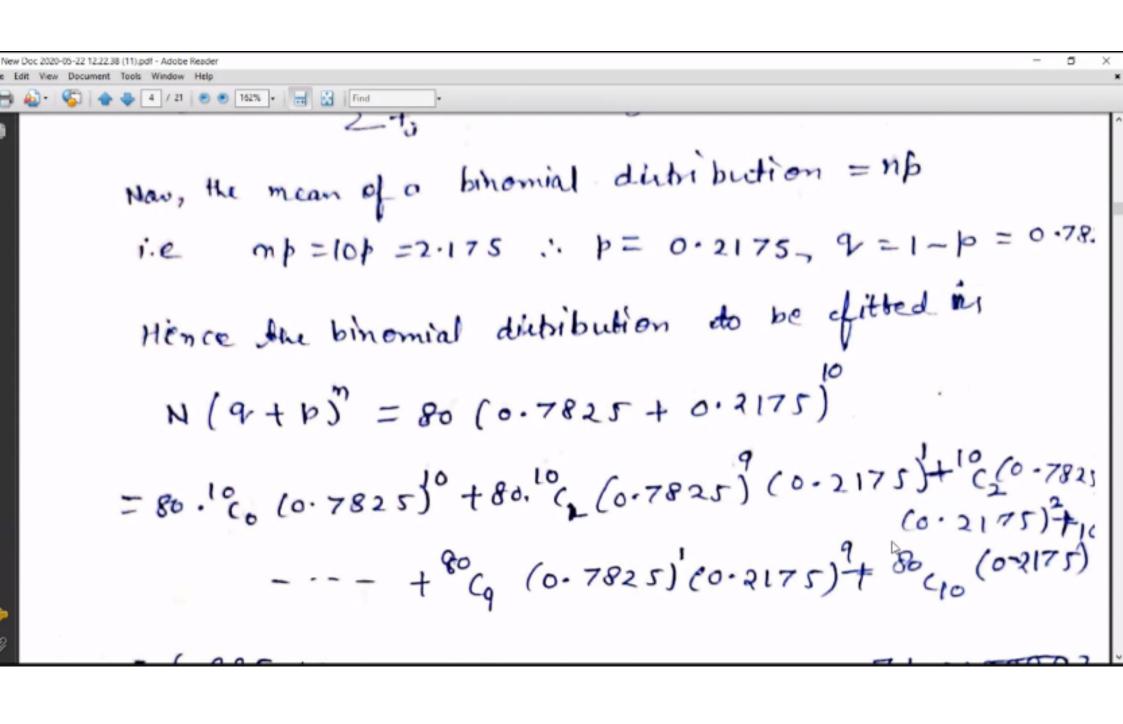


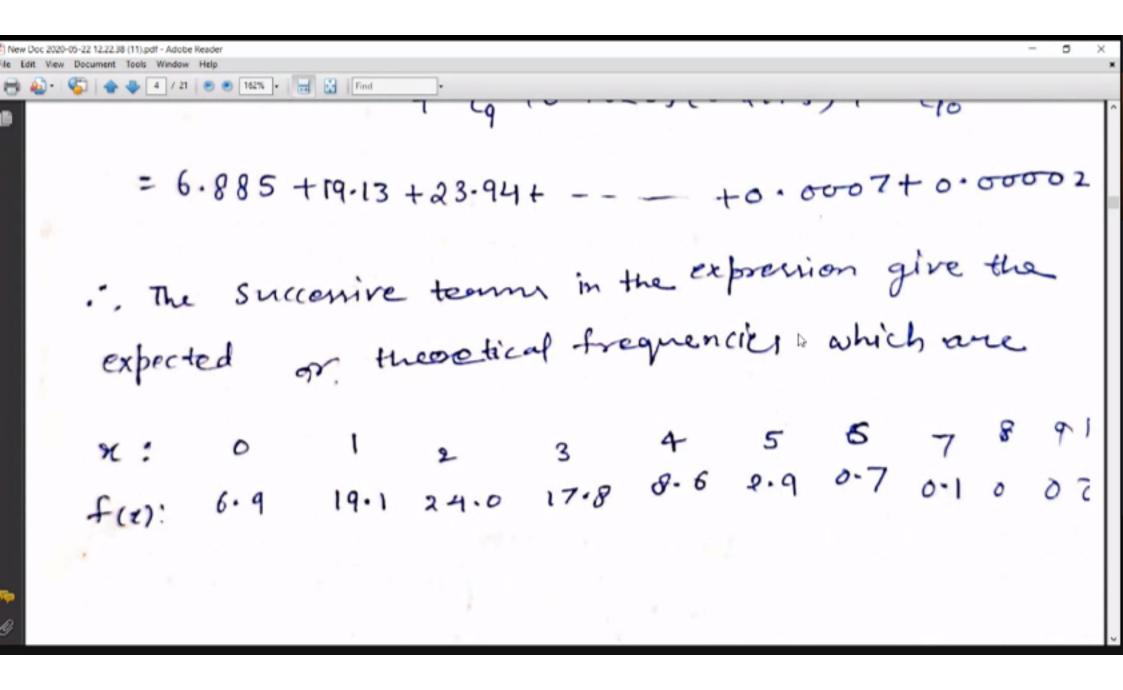


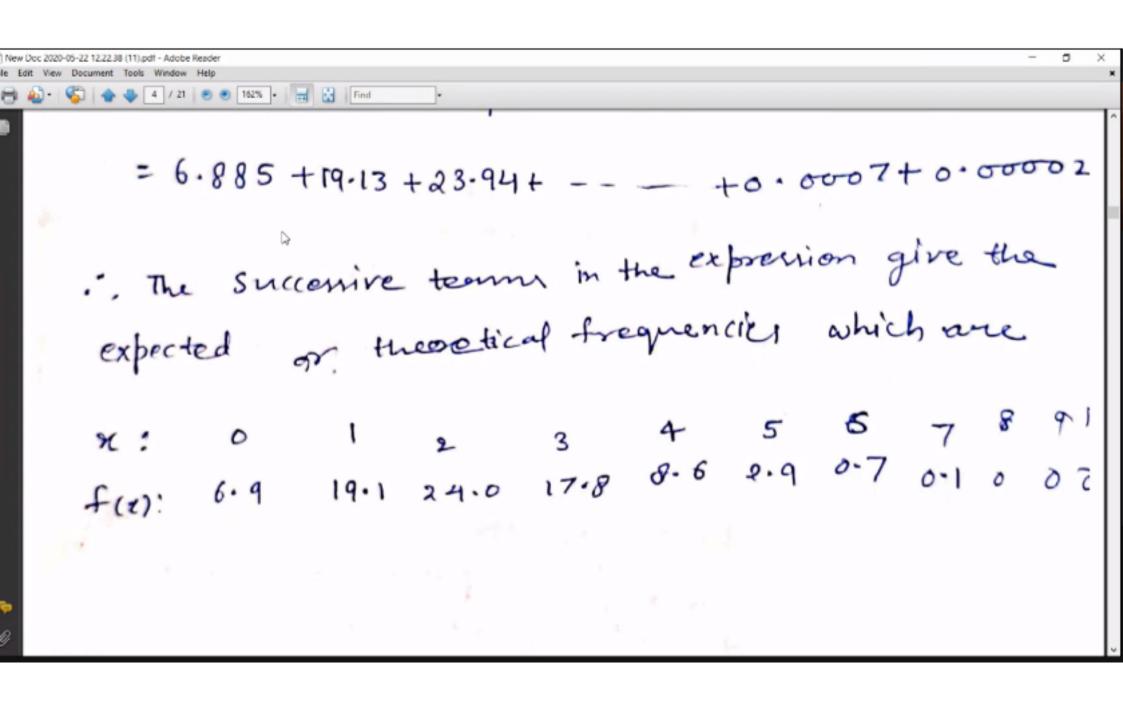




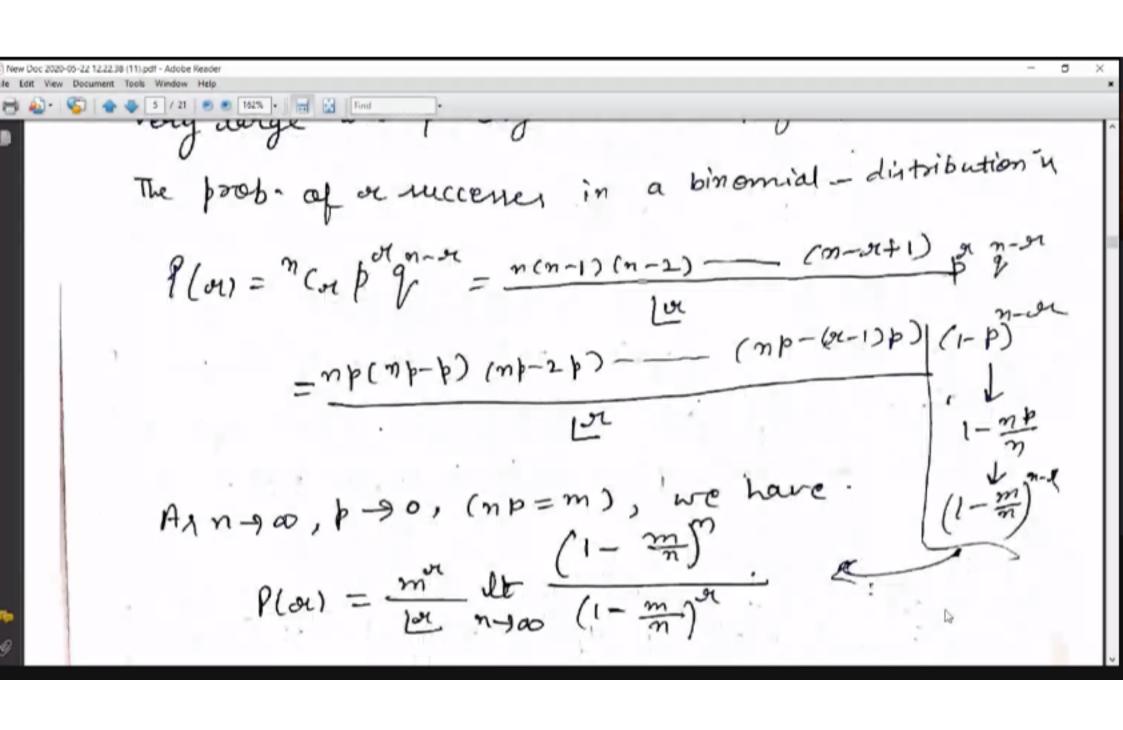
Folution: Here n=10 & x = 2+; =80 Mean = = = = = 20+56+36+32+30 Nav, the mean of a binomial distribution = np mp=10p=2.175 : p= 0.2175, 9=1-p=0.78. Hence the binomial distribution do be efitted in N(9+10) = 80 (0.7825+0.2175)

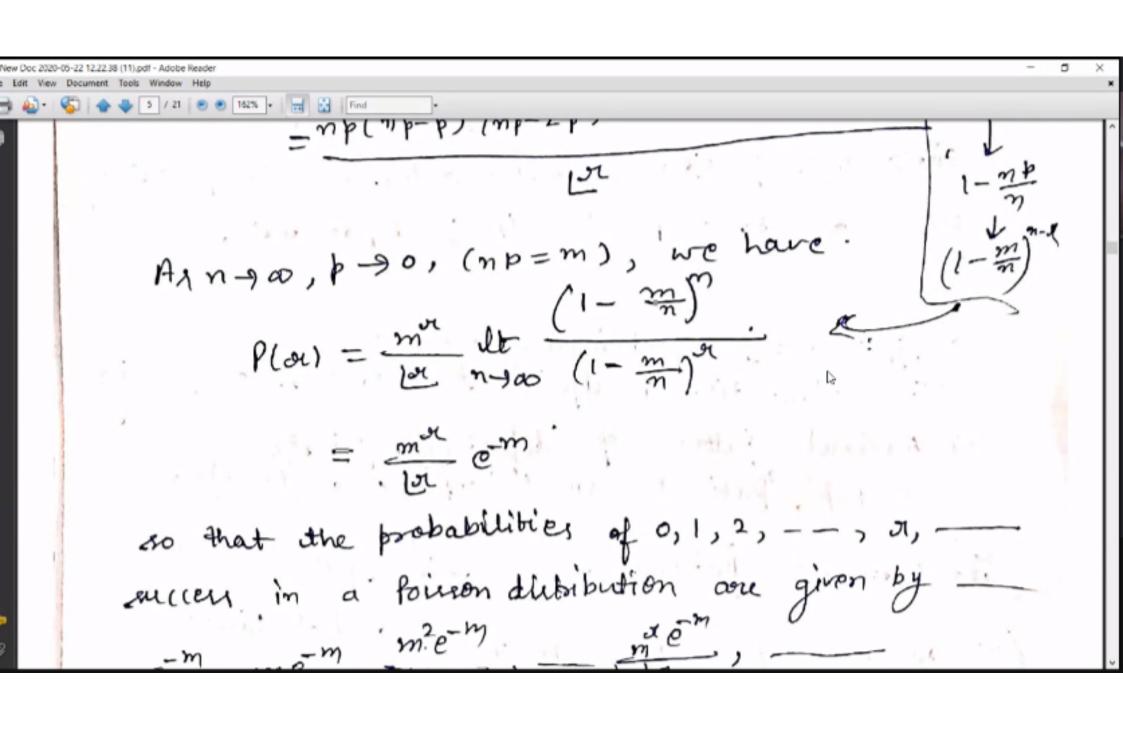


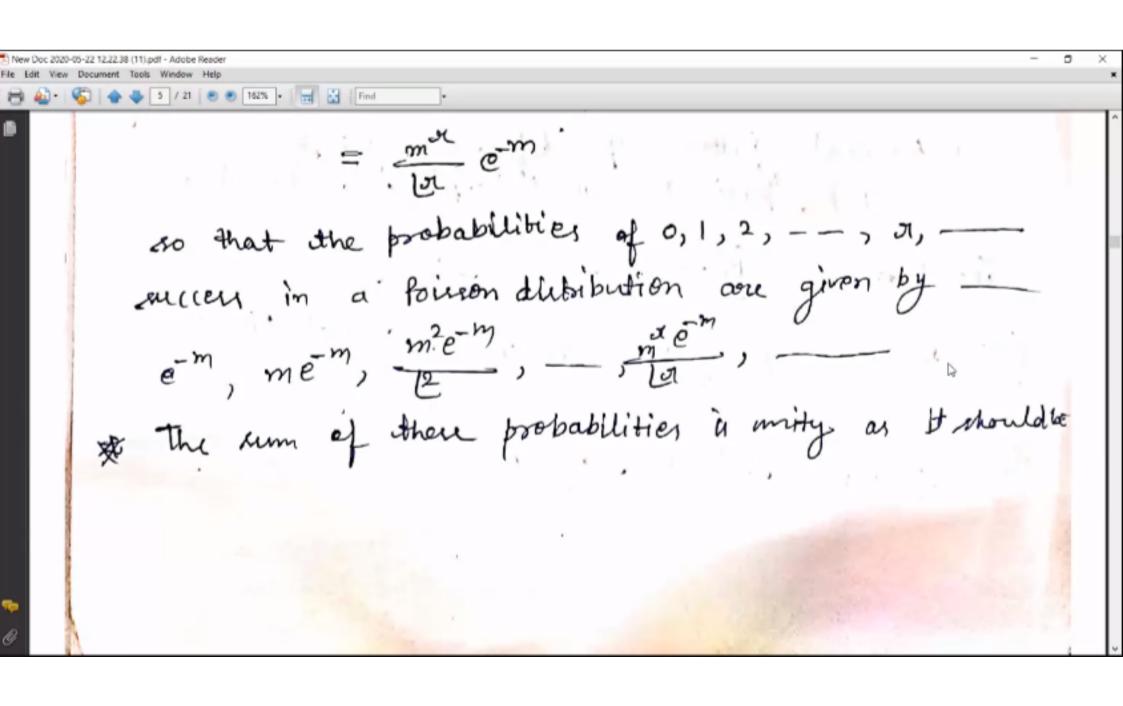




File Edit View Document Tools Window Help non Dutibution: which are extremely reare, but which have a large mumber of independent opportunities for occurrence. This distribution can be descived as a dimiting case of the binomial distribution by making n very large and p very small, keeping npfixed/=msay). a binomial - distribution 4 The prob- of or necesses in (m-s+1) gr n-sr Plan = n ( = b g = - n (n-1) (n-2) -







26-42 If the prob of a bad reaction of rom 8 that out of 2,000 individuals more than two will get a bad reaction solution! Tip follows a Poisson distribution of the Brob. of accurrence is very small. Mean m = np = 2000 (0.001)=2 Bob . that more than 2 will get a bad reaction.

1 .... chion

solution! Tip follows a tormon un the Bob. of accourance is very small. Mean m = np = 2000 (0.001)=2 Bob . that more than 2 will get a bad reaction. = 1- [Prob. that no one gets a bad reaction Frob. that one get a bad reaction  $f(x) = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u} e^{-m} + \frac{m^2 e^{-m}}{u^2}\right] = 1 - \left[e^{-m} \int \frac{m}{u}$ 

$$+ \frac{1}{e^{-m}} + \frac{1}{e^{-m}} + \frac{1}{e^{-m}} + \frac{1}{e^{-m}} = 1 - \left[ \frac{1}{e^2} + \frac{2}{e^2} + \frac{2}{e^2} \right]$$

$$= 1 - \frac{5}{e^2} = 8.32$$

On Fit a Roman distribution de the set afabreriation

9: 0 1 2 3 4

f: 122 60 15 2 1

On Fit a Roman distribution do the set afobreruation  $\gamma: 0 \quad 1 \quad 2 \quad 3 \quad 4 \\ f: \quad 12^2 \quad 60 \quad 15 \quad 2 \quad 1$ Solution nean = \( \frac{2}{2f\_i} = \frac{60 + 36 + 6 + 4.50.5}{200} i. Mean of Poisson distribution i.e m=0.5,

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Hence the other etical frequency for it micros 
$$\frac{1}{1}$$

Ne<sup>-m</sup> (m)<sup>ol</sup>
 $\frac{200 e^{-0.5} (0.5)^{3}}{10!}$ , where  $31.20,1,234$ 
 $\frac{1}{1}$ 

The other etical frequencies are

 $\frac{2}{1}$ 
 $\frac{3}{1}$ 
 $\frac{4}{1}$ 
 $\frac{1}{1}$ 
 $\frac{1}{1}$ 

jutisbution function:

The distribution function f(x) of the discrete variate X is

 $F(x) = P(X \leq x) = \sum_{j=1}^{\infty} p(x_j)$  where  $x = \alpha$  is any

The distribution fund is also sometimes called som Cumulative distribution fum"-

Ex- 260 28

: (an Ht no 1086)

A die in tarsed thouse. A success is getting 1000 on a tors. Find the mean and variance of the number of nuccess. Bob. af failure = 1-43 = = =. Bob. of no success = Brob of all failures 

1 one success 2 failure

Bob. of failure = 1-3-3.

Bob. of no success = Bob of all failures

= \frac{2}{3} \times \frac{2}{3} \times \frac{2}{3} \times \frac{2}{3} = \frac{2}{27}

Bob. of one success 2 failure
= 32 AX 3 X 3 = 4
9. 1

Bob of two nuccess and one failure

Bob. of Avree Successes = \frac{1}{3}\frac{1}{3}\frac{1}{3} = \frac{1}{27}

Bob. of Annee Successed = 
$$\frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} = \frac{1}{9}$$

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