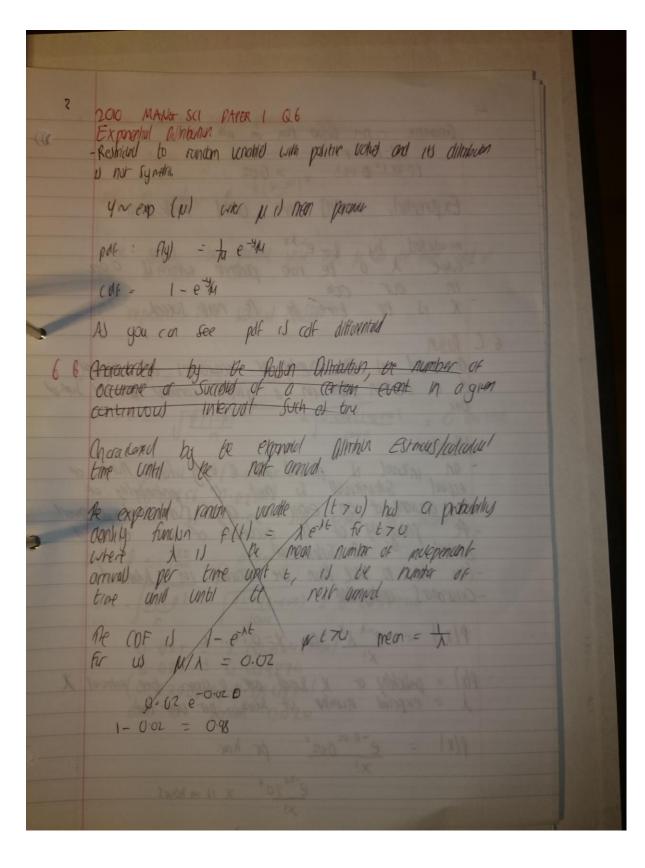
2016 MANG SCI PARER 1 QC The probability mad function p(x) of a DISCRETE random variable X represent the probability that X typis the volve x os a function of x. That is: P(x) = p(X=x) for all value of x. The probability of the event (X=x) is this defined a try sum of the probabilists of the individual actions for which X take on vale x). Geometric Dismartin Geometric distribution is distribute. It is number of every needed until sures. p(x-n) = (1-p)mp Here we want to be surestal offer n trials. I-P represents the probability of failure n-1 mans we have n-1 Rest before success on the non trial Cumulative Probability Alkabution The comulative probability distribution F(xo) at a random vonable X reprodent the probability that X does not exceed the value to as a function of to: where the function is evolvated at all values of Xa Cumulative Distribution Function The cumpletine distribution function F(x) for a continual random various x expresses the probability that x does not exceed the value x as a function of x. FIXI = P(X =x)

Proceeding of a range wing a cumulate distributes hancks. Let X be a continued rondom variable with a completive distribution function F(x) and let 0 and be two possible values of x, with $a \in b$. The probability that x has believed a and b is as follows: $P(a = x \in b) = F(b) - F(a)$ For a continued random variable it does not mother wholeve we work = a < because the probability that X is preakly equal to b is a Probability Dentry Function Number 14 mg in the range of valued for the vandon words The probability doubly finish flx) of the random varidhe is a function with fillus properties: - fal 70 & all voles of x - Area unas cura =1 - Suppose that they deality hundren is graphed. Let a and b the possible voled of random varioble X, with a cb. Then 4 probability that X led between a and b is it are under the probability dentity director before the pril el ela except = 5th F(x)dx The COF F(x) I be one unor to some probably only finclin F(x) up to Xs F (10) = 500 F(x) dx whose XM is minimum vote of V.V.



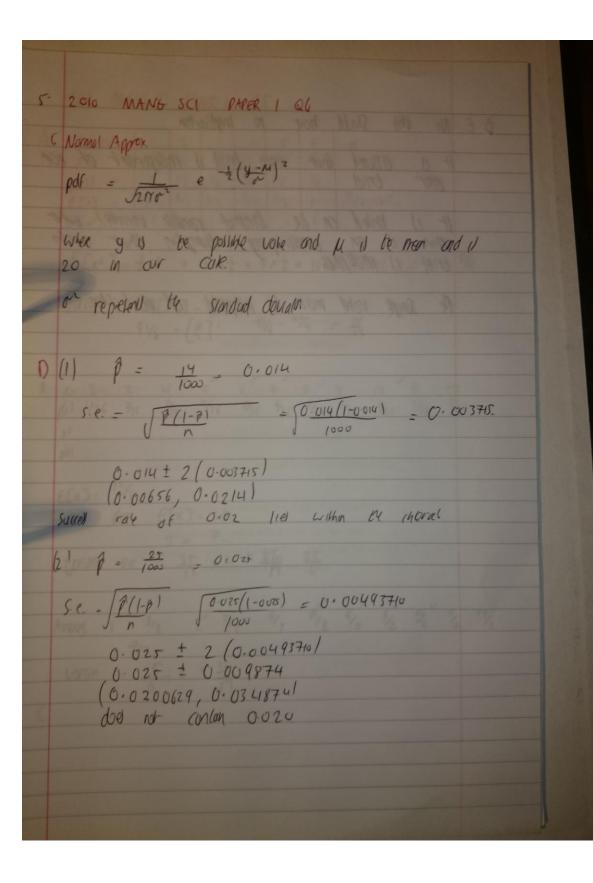
Georetic. Not failed then on with societ - (1-p) n-1 p (0.981° DOZ' = 0.02 Exponential, mull) time until how some modelled by 1-e-lx

- where I is the rate provide which is o'oz

In ar colo

I is the time to the next suical 6 C Passon -characterist of be number of occurances or success of a certain and in a given contract mond sund Assumption) equal submicinal so that the probability of the occurance of an event in any submicinal of small consint is all submicinal. - Can be no me mor one occurane in a substitute - Occuraces independed P(x) = e-1/x for x=0,12-1 P(x) = probability of X success of content X.

I = expected number of success per cont tra $\frac{|f(x)|}{|x|!} = \frac{e^{-0.02} \cos^2 x}{|x|!} px how.$



6 E. No the Shald have 10 implication. It is assured their each trial is independent of each It is word on the binmed random varioties were the an underlying assumption that each total is independent The sample word must be independent of each who

5 A. $x(spot) = 1 2 3 4 5 6 2$ $p(x) = \frac{1}{4} \frac{4}{9} \frac{9}{16} \frac{16}{25} \frac{36}{36}$ $p(x) = \frac{1}{4} \frac{4}{9} \frac{9}{16} \frac{16}{25} \frac{36}{36}$ $p(x) = \frac{1}{4} \frac{4}{9} \frac{16}{46} \frac{25}{36} \frac{36}{16}$ $p(x) = \frac{1}{4} \frac{4}{9} \frac{16}{46} \frac{25}{36} \frac{36}{16}$ $p(x) = \frac{1}{4} \frac{4}{9} \frac{16}{46} \frac{25}{36} \frac{36}{16} \frac{7}{12} \frac{7}{255}$ $p(x) = \frac{1}{4} \frac{1}{16} \frac{1}{16}$	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	
$p(x) = \frac{3^2}{3}$	
$E[x] = \frac{32}{3}$	
ore die $C(x) = 3.5$ 2 = 7. Unane or = $\frac{35}{12} \times 2 = \frac{860}{12} \cdot \frac{35}{6}$	
Averay. 1 $\frac{3}{2}$ $\frac{2}{5}i_{2}$ $\frac{6}{2}i_{2}$ $\frac{7}{12}$ $\frac{8}{2}i_{2}$ $\frac{9}{2}i_{2}$ $\frac{12}{2}i_{2}$ $= \frac{7}{12}.$ $Varun = \frac{36}{6}: 2 = \frac{35}{12}$	