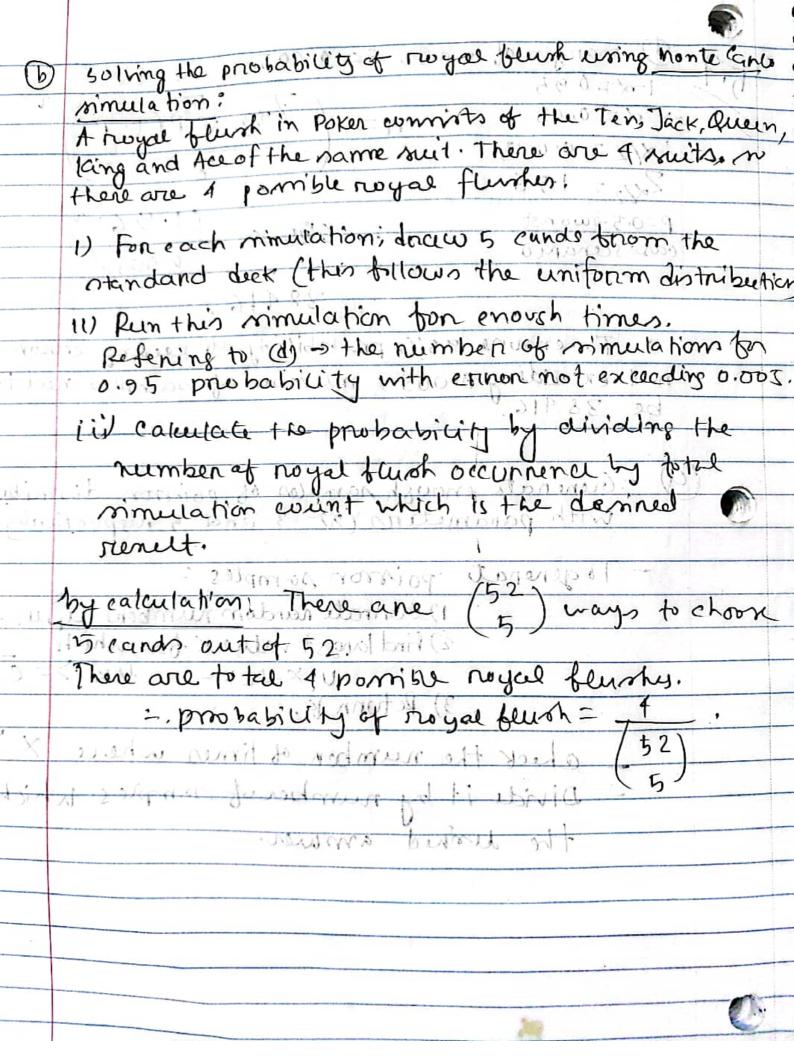
margin of ernon, E=10.005. => x=0.05 m= (74/2, JP(-4/2=0.025) Z/2 = 1.96 di sopran udinos p=0.5-sworst = 0.25 x a marginia with a collect and cernit assors int Fito Junion Si : To ensure 9.5% probability of Keeping error not exceeding 0.005; mumber of samples need to be 38 416. minidedam at Debuted hij 9 - Generate enough namples of poisson distribution with parameters (2) 3 and 5 respectively (X,K) To generate poisson samples 1) Genrate nardom number u, 12-2) find largest value K for which 2) Detar Controdulx OFX - 144 MKI >= 6 3) Return K. - check the number of times where X > Y. - Divide it by number of samples which is the derived ammer.



(c) Description of probability calculation using Monte-Carlo Simulation: 1 118 (46) 1x1 Him when se First mechanic, in has senvice time with exponentical distribution Exp (7x-5) Second mechanic Y; has senvice time Exp(7y=20), Probability of being served by first mechanic . by prenggred 1/5=0,2,100 1 cunit Probability of being served by second mechanic, By following the otens below generating samples using Monte Canlo simulation, the prophability of sentice time being image than 35 minutes on 6 can be calculated 8030 1 5000 1) First determine the number of samples needed to be calculated for maintaining error & under a specific value with probability (1-4) number of sumples [0.25 X (ZX/2) 2 (2) Gunenating samples for the service time is a two step process: (1) Generate a nandom number U tromtuniform distribution (ii) if u is less than OTT Pn=0.2 the first mechanic is chosen. Otherwike choose the second mechanic y hands Py -0.8.

3 After the mechanic is chosen calculate samples with Exp(Ax) on Exp(Dy); for sample xi = - In (1-11) on xi = - the (-w) in bross? By repeating oteps 2 and 3 for in number of times, n samples can be generated. Finally, in the no samples, wint how many times the service time > 0.583 hours, - Lividing this with no we will get the demned prishabilit water Monte Carlo consulation of he president Example sample generation: Prom unitonm distribution tables U=0.681 2 20 is chosen The po colout (min) of the laire in the ON den a opposition value prote pront 2 2 1 1 (1-6, 68 13) - with singer of 1003 72mon pritononed (c) a sample would be 0,00572 houng. (1) Grenning of a raindern rumber the their mechanic is closer. With