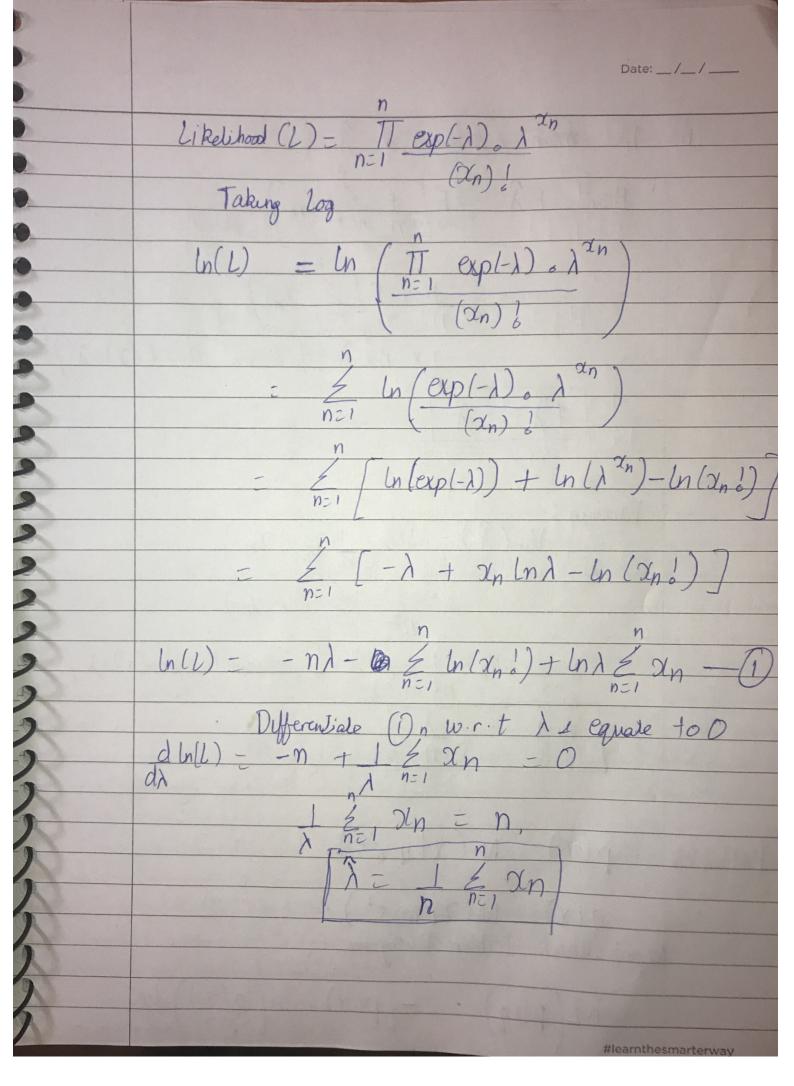
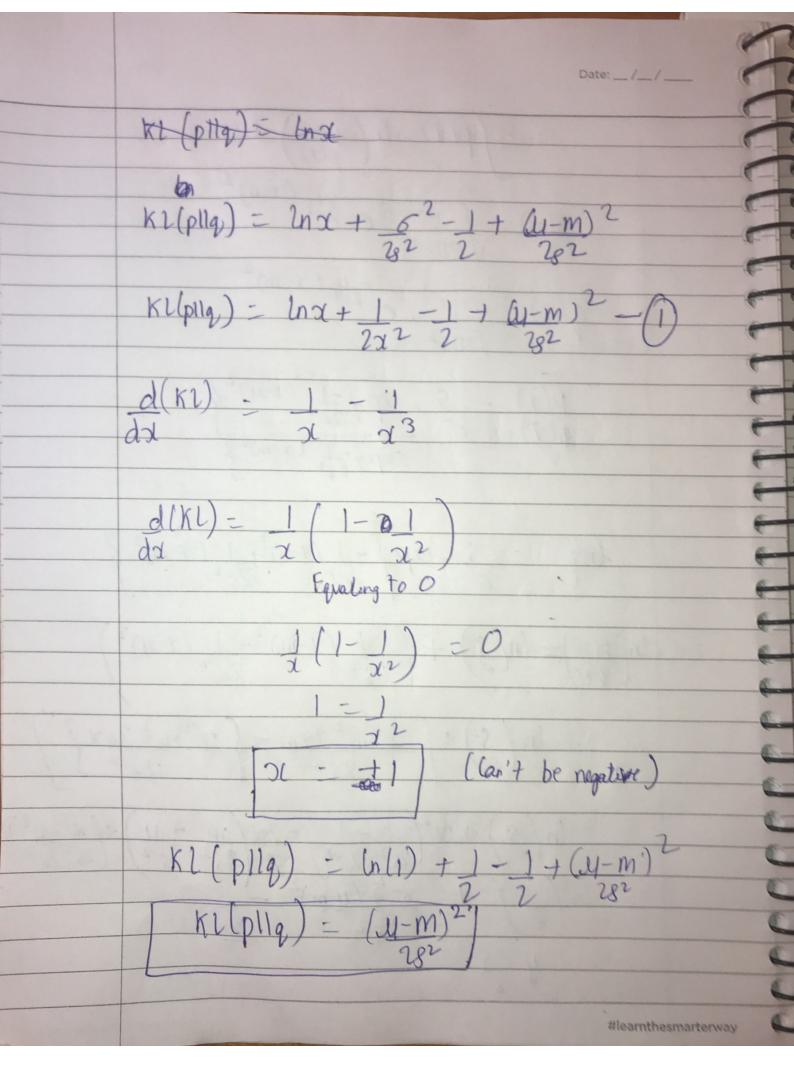
Date: _/_/__ E(6 M2) = 6 7 24 24 24 E(0 ML) = 62 Here, we use the following 2 properties of Expertation $E(x) = \int N(x|u,6^2)xdx = y$ E[x2] = \$\int N(x/4,62) x dx = 42+62 Poisson Distribution -> P(x/A) = e xx 002 Here, E(x) = Var (x) = 1 IID = { x, x2, --- xp } (i) Max^m likelihood estimate of λ (ii) Mean & Variance of maximal likelihood estimator

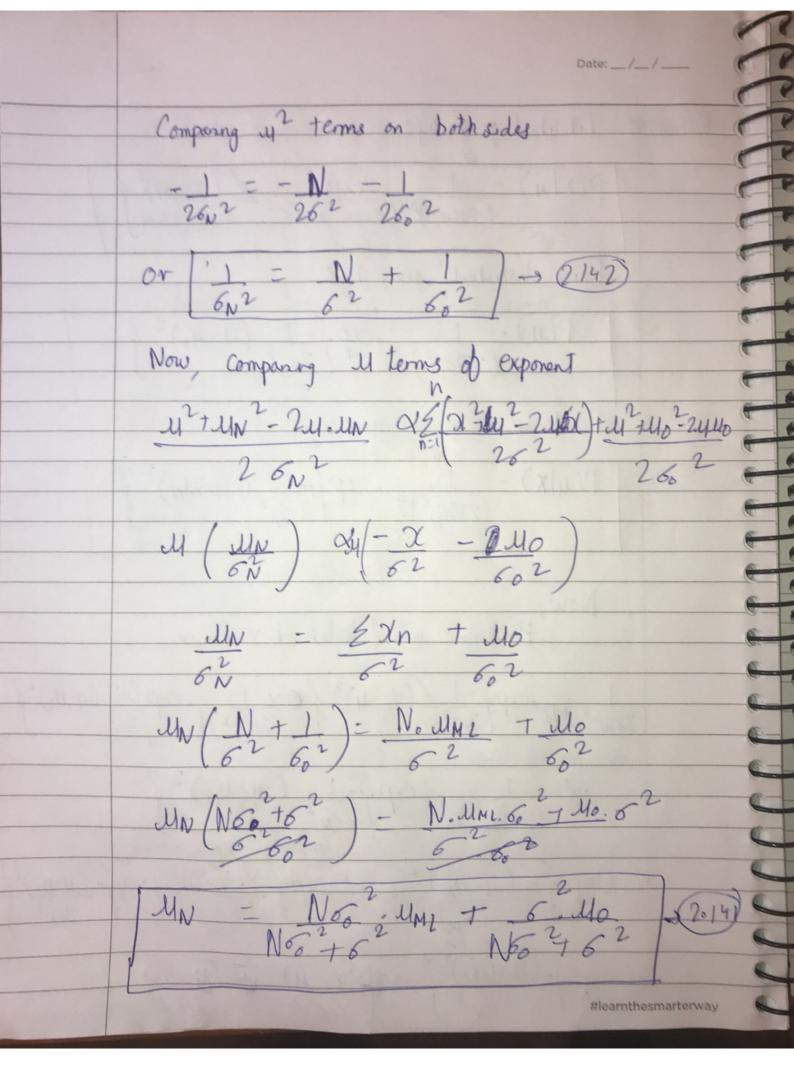
Solution: $P(\alpha_1|\lambda) = e^{-\lambda} \lambda^{\alpha_1}$ $P(\alpha_1|\lambda) = e^{-\lambda} \lambda^{\alpha_2}$ $P(\alpha_1|\lambda) = e^{-\lambda} \lambda^{\alpha_2}$ $P(\alpha_1|\lambda) = e^{-\lambda} \lambda^{\alpha_2}$ #learnthesmarterway

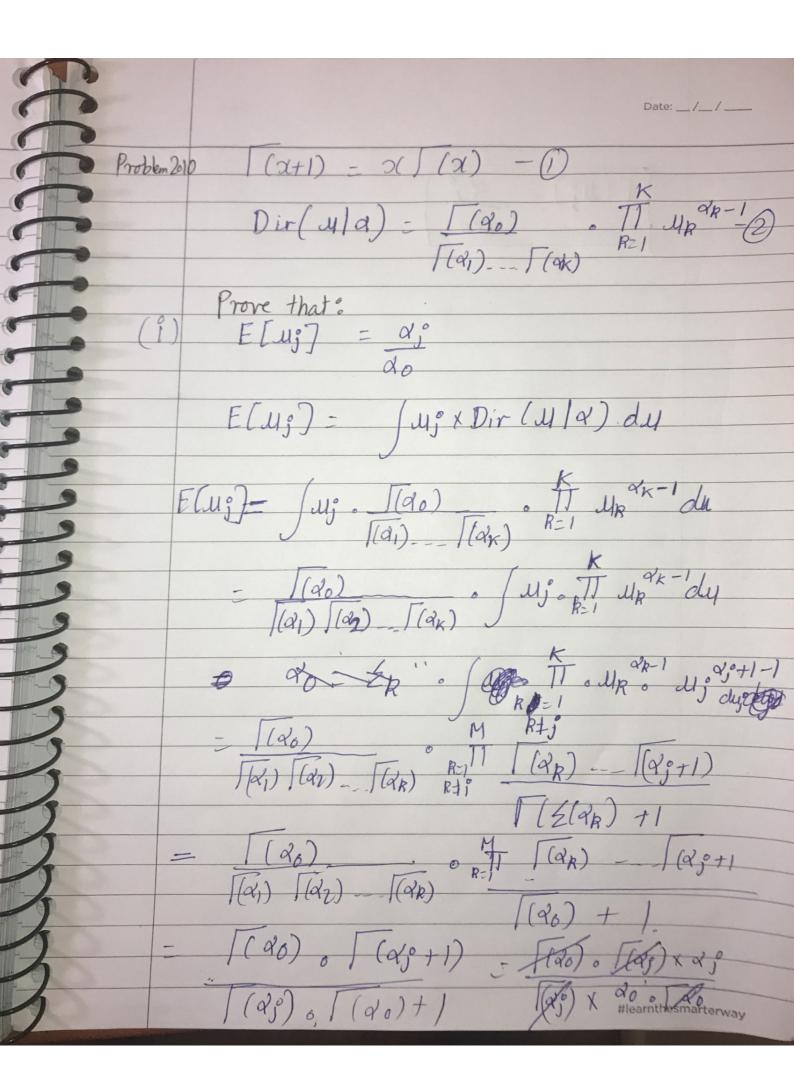


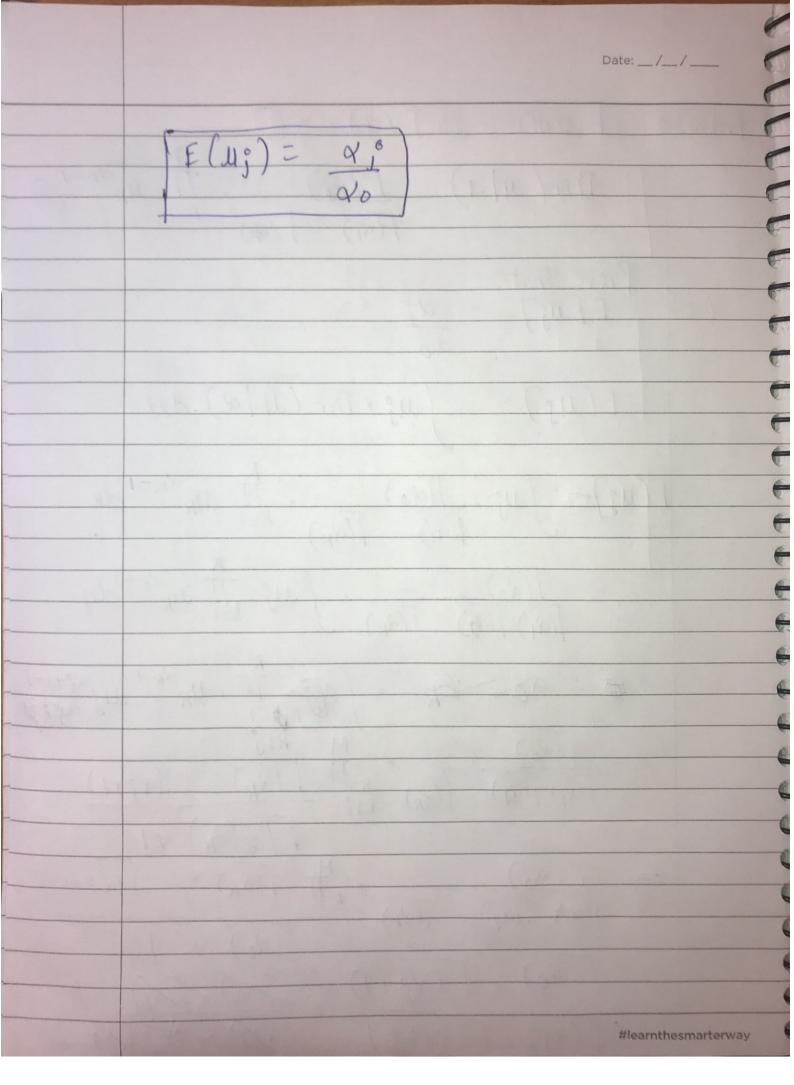
The mean e varance of 3 $= \int_{n} \times E\left[\frac{2}{n}, \chi_{n}\right]$ - IX MX > [Griven that E(x)->] Variance : Var(A) = Var(1 & \under $= \frac{1}{n^2} \stackrel{\text{def}}{=} Var(x_n)$ 1 L Griven that Var[x]=1 p(x) - N(x/4,62) Problem 1.30 Q(X) - N(X/m, s²) Au to Kullback - Leibler Divergence $p||q\rangle$ - $-|p(x)| \cdot ln(q(x)) dx$

Date: __/_/_ pla). In (pla) da 21162 ° e 262 (X-41)2 $\frac{1}{\sqrt{2\pi}s^2} e^{-\frac{1}{2s^2}(\chi-m)^2}$ P(x) = S exp (-1 (x-4) 2 ? $= \frac{S}{6} \exp \left(\frac{1}{26^2} \left(\frac{1}{25^2} \right) + \frac{1}{25^2} \left(\frac{1}{25^2} \right) \right) = \frac{1}{25^2} \left(\frac{1}{25^2} \right) = \frac{1}{25^2} \left(\frac{$ $\frac{S}{S}$ + $\left(\frac{1}{28^2}(\chi-m)^2-\frac{1}{26^2}(\chi-\mu)^2\right)$ #learnthesmarterway









References For the Assignment

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- [3] https://www.microsoft.com/en-us/research/wp-content/uploads/2016/05/prml-web-sol-2009-09-08.pdf
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 - [5] https://www.microsoft.com/en-us/research/uploads/prod/2006/01/Bishop-Pattern-Recognition-and-Machine-Learning-2006.pdf