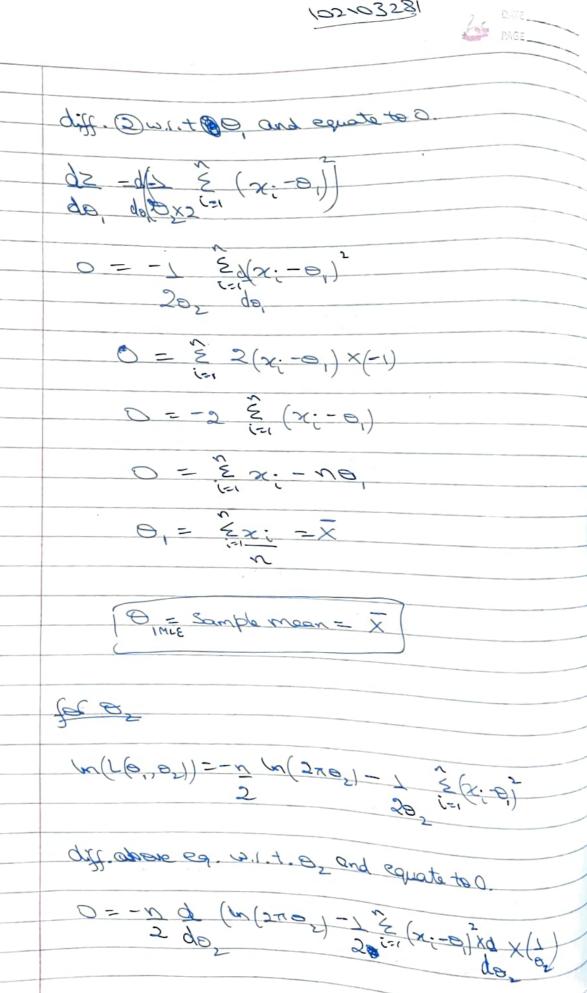
Name -> Ishaan Gaba Ralino. -> 102103281 Crarb >> 3 (010 Assignment Parameter Estimation (91) X, x2 - x -> Randon Sample; Size = n Normal population -> mean = B, vor= 8. Find max libelihead estimation of trace 2 powerter Sel > hoff = f(x) = 7 × 6 500 = 2000 M=0, 62=0 f(x,)= 1 x e 202 f(x:) = 1 × e 2002 f(x:)= = x e 20, We liked function $\frac{1}{2}\left(\theta_{1},\theta_{2}\right) = \frac{\pi}{2} \qquad \frac{1}{2\pi\theta_{2}} \times \frac{e^{-\left(\pi(-\theta_{1})^{2}\right)^{2}}}{2\theta_{2}}$ L(0,02) = 7 (0)-1/2 7 (27) = (x:-0) = 1 $L(\theta_1, \theta_2) = (\theta_1)^{n/2} (2\pi)^{-n/2} (2\pi)^{n/2}$ Taking less both sides $7 = \ln(L(\theta_1, \theta_2)) = -\frac{1}{2} \ln(\theta_2) - \frac{1}{2} \ln(2\pi - 1) \frac{2}{2} (x_1 - \theta_1)^2$

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PICE.

 $0 = -\frac{1}{2} \times \frac{1}{2} \times 2\pi - \frac{1}{2} = \frac{2}{2} (x_{1} - \theta_{1})^{2} \times -\frac{1}{2}$ $x = \sum_{i=1}^{n} (x_i - \theta_i)^2 \times 1$ 05 - 7 5 (x:-01) X=, & Balk B = 1 2 (x:-X) = s= Sample variance Bal x x - x - xu - ander souple. B(m,0) & - un nown (Sompute value of a veing MUE bolt of Bironig = ((x) = 2 0x (1-0) -x joint density on.

\(\(\times_1 \times_2 \) = \(\times_1 \) = \(\times_2 \) \(\times_2 \) \(\times_2 \) \(\times_3 \) \(\times_2 \) \(\times_3 \) \ = 7 m C (1-0) (-1 (m-x') Taking log

ml = m (7 m cx;) + m 0 = xi + m (1-8) = (m-11)

102103281 DATE PAGE la L= m(x mcx) + & (mo) xt & (m-xi) la (1-8) diff. w. I. t. o and equate to O 0=9 (5 xho) +3(w-xi) q (w(1-0)) D = \\\ \frac{\x}{\x} \cdot \times \(\times \) \\ \frac{\x}{\x} \\ \frac{\x}{\x} \cdot \times \\ \frac{\x}{\x} \\ \frac{\x}{ 0 (21) (1-0) T SS: = (vw - 5 5:5:) (7) 1-0 = NW - EX. 8 = 22: $\theta = \overline{X}$ $\left[X = \frac{2}{2}X\right]$ X = (1,0) 3 31H