< Ams 8 and Ans 8.1>

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E	For a single instance, univariale normal distribution probabilistic function is:
	distribution probabilistic function is -
	$\frac{1}{\sqrt{1-(\chi^2-1)^2}}$
	$p(\alpha; \mu, \sigma) = (1 + \rho^{-1} 2\sigma^{-1})$
	$p(x; \mu, \sigma) = \frac{1}{2\pi\sigma} \left(\frac{1}{2\sigma^2} \left(\frac{1}{2\sigma^2} \left(\frac{1}{2\sigma^2} \left(\frac{1}{2\sigma^2} \frac{1}{2\sigma^2} \left(\frac{1}{2\sigma^2} \frac{1}{2\sigma^2} \right) \right) \right) \right)$
	For N samples, the function would be:- $p(X; \mu, \sigma) = \prod_{j=1}^{N} \frac{1}{\sqrt{2\pi}\sigma} e^{2\sigma^2} (x_j^2 - \mu)^2$
	$-1 (\alpha_1 - \omega_2)$
	$p(X; \mu, \sigma) = \prod_{i=1}^{N} \frac{1}{e^{2\sigma^2}}$
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	Low Many
	Assumptions.
¢	Each data point is sampled independently from the
	same distribution
c	Assumptions: Each dada point is sampled independently from the same distribution: Independent and Identically Distributed
	hog likelihood function:
	$\ln p(x:\mu,\sigma^{2}) = \ln \frac{n}{1+1} \frac{1}{\sqrt{2\pi}\sigma} \left(\frac{\alpha i - \mu^{2}}{2\sigma^{2}} \left(\frac{\alpha i - \mu^{2}}{2\sigma^{2}}\right)\right)$
	$en p(x; \mu, \sigma) = en p(x; \mu, \sigma)$
	(=1 VKI1 - 2
	$= \sum_{i=1}^{N} \ln \left(\frac{1}{2\pi \sigma} - \frac{1}{2\sigma} \right) \left(\frac{\alpha_i}{2\pi \sigma} \right)^2$
	- <u>\</u> \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	1
	$= \frac{1}{2\sigma^2} \left(\frac{1}{2\pi\sigma} - \frac{1}{2\pi\sigma} \right)$
	$= \frac{N}{2\sigma^2} \frac{1}{(\alpha_i \mu)^2} \frac{N \ln \sqrt{2\pi}}{5 \ln \sigma}$
A	$\frac{1}{2\sigma^2}$ $\frac{1}{1=1}$
	$= \frac{N}{2\sigma^2} - \frac{1}{2\sigma^2} \left(\frac{1}{2\sigma^2} + \frac{1}{2\sigma^2} + \frac{1}{2\sigma^2} \right) + \frac{1}{2\sigma^2} \left(\frac{1}{2\sigma^2} + \frac{1}{2\sigma^2} + \frac{1}{2\sigma^2} \right)$
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Name of the Other	+ w.m.

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	AT IN WARE NOWNED STANDED.
	Maximum_likelihood estimation for mean of the distribution µML.
	\Rightarrow max ln (p(x: μ, σ)) MML
	= S J J D D = O · M , WINNER M J J D
	$\Rightarrow \frac{8}{5\mu} = \frac{1}{1-\mu} (\alpha_i - \mu)^2 + n \ln \sqrt{2\pi} + n \ln \sigma$
50	$\Rightarrow \frac{8}{8} = \frac{8}{(\alpha_{i} + \alpha_{i})} = \frac{1}{2\sigma^{2}}$ $= \frac{1}{2\sigma^{2}}$
	$\Rightarrow -\frac{1}{2\sigma^2} = \frac{1}{1-1} $
je.	$\Rightarrow \sum_{i=1}^{N} (x_i - y_i) = 0$ $\Rightarrow \sum_{i=1}^{N} x_i - y_i y_i = 0$
i, i.,	$\Rightarrow \sum_{i=1}^{N} x_i = n_i M_{L}$
	$\Rightarrow M_{ML} = \frac{1}{N} \times \frac{N}{N}$

(M	Maximum likelihood estimation for standard
	deviation ML.
4.00	\Rightarrow max $p(X; \mu, \sigma)$
<u> </u>	OML I
	S N 1 D 1 D 1 D 1 D 1 D 1 D 1 D 1 D 1 D 1
	$\Rightarrow \frac{S}{S\sigma} \left(\frac{N}{i=1} \frac{-1}{2\sigma^2} \left(x_i - \mu \right)^2 + m \cdot \ln \sigma + m \ln \sqrt{2\pi} \right)$
	=> 8 nm = = 8 . \((\pi i + \mu)^2 \) = 0
1	$\Rightarrow \frac{8 \text{ nm r} - 8 \cdot \cancel{\cancel{E}} (\cancel{\cancel{x}} i - \cancel{\cancel{y}}) \cdot }{8 \sigma} = 0$
4	
	$\Rightarrow \frac{\eta}{\sqrt{2}} = 0$
7	r i=1 /203
	N 2
	$\Rightarrow \frac{m}{2} = \frac{1}{2} \geq (xi - \mu)$
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	\Rightarrow \int_{-2}^{2} \int_{-2}^{2} \int_{-2}^{2} \int_{-2}^{2}
	$\Rightarrow \int_{0}^{2} \frac{1}{2\pi} \left[\frac{1}{2\pi} \frac{1}{4\pi} \right]^{2\pi}$
	1 1 2 1