

Lec. 22-d- example 3

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1:58 AM

$$f(x) = e^x$$

let $a \leq x \leq b$

unofficially;

$$\int_a^b e^x dx = e^b - e^a$$

Important!
 $i \in \mathbb{Z}_{>0} \quad i \neq -1$

$$L = e^b - e^a = U$$

$$L(P_n; f=e^x) = \sum_{i=0}^{n-1} e^{a+i(\frac{b-a}{n})} \left(\frac{b-a}{n}\right) = e^a \sum_{i=0}^{n-1} e^{i(\frac{b-a}{n})} \left(\frac{b-a}{n}\right) \rho = e^{\frac{b-a}{n}}$$

$$= e^a \left(\frac{b-a}{n}\right) \left(\frac{1-\rho^n}{1-\rho}\right) \rightarrow e^b - e^a$$

so to speak
