MAT 202E HW3

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Q3- Given Length $s = \int_a^b \sqrt{1+\left(\frac{dy}{dx}\right)^2}\,dx$, $y = e^{x^2}$

$$\frac{dy}{dx} = \frac{d}{x}(e^{x^2}) = e^{x^2} \cdot 2x = \underline{2x e^{x^2}}$$

$$s = \int_a^b \sqrt{1+(2xe^{xy})^2}\,dx = \boxed{\int_a^b \sqrt{1+4x^2 e^{2x^2}}\,dx}$$

this is my f

c) Gauss $[a,b] = [1,2]$ Nadir Doğan 110180502

$[a,b] \rightarrow [-1,1]$

$$x = \frac{b+a}{2} + \frac{b-a}{2}t = \frac{1+2}{2} + \frac{2-1}{2}t = \frac{3}{2} + \frac{1}{2}t$$

$dx = \frac{1}{2}dt$

$$f = \frac{1}{2}\sqrt{1+(3+t_n)^2}\, e^{\frac{(3+t_n)^2}{2}}$$