

$$f(x) = e^x \quad n=2. \quad x_0=1. \quad x \in [-4, 4]$$

$$\text{So we have } t_2(x) = \sum_{i=0}^2 \frac{f^{(i)}(1)}{i!} (x-1)^i$$

$$= e + e(x-1) + \frac{e}{2}(x-1)^2$$

$$\text{Then } C_1 = \max_{x \in [-4, 4]} \frac{|f^{(3)}(x)|}{3!}$$

$$\frac{|f^{(3)}(x)|}{3!} = \frac{e^{(x)}}{6} = \frac{e^4}{6}$$

which $x=4$ is the maximum value,

$$\therefore C_{\max} = \frac{e^4}{6}$$