

$$e^4 \approx 1 + (e-1)[4 + e(4-1)] + \dots$$

$$\dots + \frac{e^2}{2}(e^2-1)(4-2)$$

$$\approx 2.188545 + 4.720909$$

$$\approx 49.09454 = \beta$$

$$\longrightarrow e^{1.3} \approx 3.669297 = x_{1.3}$$

$$e^4 \approx 54.5981500 = x_4$$

$$e_{1.3} = |x_{1.3} - \alpha| < e_4 = |x_4 - \beta|$$

$$9.55877 > 5.50361$$

ASSUMING MY α & β ARE CORRECT,
THE EXTRAPOLATED APPROXIMATION
IS MORE CORRECT