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$$I = \int_{1}^{e} (\ln x)^{2} dx = \frac{1}{I} = \frac{e}{2(1-e)}$$
There is a second of the second

$$= 2 \int_{1}^{e} \ln x \, dx = 2 \left[\frac{1}{x} \right]_{1}^{e} = 2 \left(\frac{1}{e} - 1 \right) = \frac{2}{e} - 2 = \frac{2 - 2e}{e} = \frac{2(1 - e)}{e}$$

$$2 \int_{1}^{2} \ln x \, dx = 2 \left[\frac{1}{x} \right]_{1}^{2} = 2 \left(\frac{1}{e} - 1 \right) = \frac{2}{e} - \frac{1}{e}$$

$$\left(1 - \frac{2}{x} \right)^{2x} = \lim_{x \to +\infty} \left(1 + \frac{1}{e} - \frac{1}{e} \right) = \frac{2}{e} - \frac{1}{e} - \frac{1}{e} = \frac{1}{e} - \frac{1}{e}$$

$$\lim_{X \to +\infty} \left(1 - \frac{2}{x} \right)^{2X} = \lim_{X \to +\infty} \left(1 + \left[\frac{1 - \frac{2}{x}}{\frac{2}{x}} \right]^{\frac{2}{x}} \right)^{2X \cdot \frac{X}{2}} = No!$$

$$\int_{0}^{\infty} \left(1 - \frac{2}{x}\right)^{2x} = \lim_{x \to +\infty} \left(1 - \frac{2}{x}\right)^{2x} = \lim_{x \to +\infty} \left(\frac{1 - \frac{2}{x}}{x}\right)^{2x} = e^{x^{2}} = e^{\infty} = \infty$$

(4) $\xi(x) = e^{x} \cdot seu \times x_{o} = \pi$

S'(x0) = eT. COST = eT. 1 = eT

 $y = e^{\pi}x - e^{\pi}\pi$

 $\log_{\frac{1}{2}}(x^2-x) \leq \log_{\frac{1}{2}}(x)$

X2-X ≥ X x2-2x ≥ 0 x (x-2)>0

 $y - 0 = 2 e^{\pi} (x - \pi)$

8'(x) = ex. coox

y-8(x0) = 3'(x0) (x-x0) 8(Xo) = F(TT) = eT. seu(TT) = eT. 0 = 0

$$=2\left[\frac{1}{x}\right]^{e}=2\left(\frac{1}{e}-1\right)^{e}$$

eg. tangente?

$$2\left[\frac{1}{x}\right]^{e} = 2\left(\frac{1}{e} - 1\right)^{e}$$

$$2\left[\frac{1}{e}\right]^{e} = 2\left(\frac{1}{e} - \frac{1}{2}\right)^{e}$$