

8) Find rel extrema and POI.

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$$y = x \ln x$$

$$y' = x \cdot \frac{1}{x} + \ln x$$

$$y' = 1 + \ln x = 0$$

$$\ln x = -1$$

$$e^{-1} = x$$

$$x = \frac{1}{e}$$

$$y = \frac{1}{e} \cdot \ln \frac{1}{e}$$
$$\frac{1}{e} (-1) = -\frac{1}{e}$$

$$\left(\frac{1}{e}, -\frac{1}{e}\right)$$

$$y'' = \frac{1}{x} = 0 \quad \text{NO POI}$$