

$$\int_1^e \frac{dx}{2+\ln x} < \frac{e-1}{2}$$

Ans.

$$2 \leq \ln x \leq 1$$

$$\frac{1}{3} \leq \frac{1}{2+\ln x} \leq \frac{1}{2}$$

now

M-I. $\int_1^e \frac{x}{3} \leq \int_1^e \frac{1}{2+\ln x} \leq \int_1^e \frac{x}{2}$ Done.

M-II.

$$m \leq f(x) \leq M$$

$$\frac{1}{3}(e-1) \leq \int_1^e \frac{1}{2+\ln x} \leq \frac{1}{2}(e-1)$$