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## example of integral test

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$$\sum_{k=1}^{\infty} \frac{1}{k \log k}.$$

Since the integral

$$\int_{1}^{\infty} \frac{1}{x \log x} dx = \lim_{M \to \infty} \left[ \log(\log(x)) \right]_{1}^{M}$$

is divergent also the series considered is divergent.