QUESTION

Differentiate the function $\dfrac{\ln x}{x^2}$ with respect to x.

ANSWER

$$\frac{d}{dx}\left(\frac{\ln x}{x^2}\right) = \frac{x^2\left(\frac{1}{x} - (\ln x)(2x)\right)}{(x^2)^2} = \frac{x - 2x\ln x}{x^4} = \frac{1 - 2\ln x}{x^3}$$