

Wolfram|Alpha Input: integrate $x^*(\ln x)^2$

STEP 1

Take the integral:

$$\int x \log^2(x) dx$$

STEP 2

Factor out constants:

$$= \frac{1}{2} x^2 \log^2(x) - \int x \log(x) dx$$

STEP 3

The integral of x is $\frac{x^2}{2}$:

$$= \frac{x^2}{4} + \frac{1}{2} x^2 \log^2(x) - \frac{1}{2} x^2 \log(x) + \text{constant}$$

STEP 4

Which is equal to:

Answer:

$$= \frac{1}{4} x^2 (2 \log^2(x) - 2 \log(x) + 1) + \text{constant}$$

