“LUCKY 7”

Example:

$\int x^2 \ln x \, dx = ?$

let u = lnx — so v = $\frac{x^3}{3}$

so du = $\frac{1}{x}$ dx — let dv = x^2 dx

$\int x^2 \ln x \, dx = \ln x \left(\frac{x^3}{3}\right) - \int \frac{x^2}{3} dx = \boxed{\ln x \left(\frac{x^3}{3}\right) - \frac{x^3}{9} + C}$