

$$(a) \int \frac{\ln x}{x} dx; \quad (b) \int \frac{dx}{x \ln x},$$

$$(B) \int \frac{dx}{x \ln^2 x}.$$

$$\int (\ln x/x) dx = \int \ln x \, d(\ln x) = [t = \ln x] = \int t \, dt = t^2/2 + C = \ln^2 x / 2 + C$$

$$\int (dx/x \ln x) = \int (d(\ln x)/\ln x) = [t = \ln x] = \int (dt/t) = \ln|t| + C = \ln|\ln x| + C = \ln(\ln x) + C$$

$$\int (dx/x \ln^2 x) = \int (d(\ln x)/\ln^2 x) = [t = \ln x] = \int (t^{-2} dt) = t^{-2+1}/(-2+1) + C = -1/t + C = -1/\ln x + C$$