

$$\begin{aligned}
& \text{restart} \\
& \text{Ecuacion} := x \cdot \log(x) \cdot \text{diff}(y(x), x) - y(x) = 0 \\
& \quad \text{Ecuacion} := x \ln(x) \left(\frac{d}{dx} y(x) \right) - y(x) = 0 \tag{1} \\
& \text{EcuacionNormalizada} := \text{expand} \left(\frac{\text{lhs}(\text{Ecuacion})}{x \cdot \log(x)} = \frac{\text{rhs}(\text{Ecuacion})}{x \cdot \log(x)} \right) \\
& \quad \text{EcuacionNormalizada} := \frac{d}{dx} y(x) - \frac{y(x)}{x \ln(x)} = 0 \tag{2} \\
& p := -\frac{1}{x \cdot \log(x)} \\
& \quad p := -\frac{1}{x \ln(x)} \tag{3} \\
& \text{IntP} := \text{int}(p, x) \\
& \quad \text{IntP} := -\ln(\ln(x)) \tag{4} \\
& \text{SolGral} := y(x) = C_1 \cdot \exp(-\text{IntP}) \\
& \quad \text{SolGral} := y(x) = C_1 \ln(x) \tag{5} \\
& \text{Comprobacion}_1 := \text{simplify}(\text{eval}(\text{subs}(y(x) = \text{rhs}(\text{SolGral}), \text{Ecuacion}))) \\
& \quad \text{Comprobacion}_1 := 0 = 0 \tag{6} \\
& \text{Comprobacion} := \text{dsolve}(\text{Ecuacion}) \\
& \quad \text{Comprobacion} := y(x) = _C1 \ln(x) \tag{7} \\
& \text{restart} \\
& \text{Ecuacion} := x \cdot \log(x) y' - y = x \cdot 3 \cdot (3 \cdot \log(x) - 1) \\
& \quad \text{Ecuacion} := x \ln(x) \left(\frac{d}{dx} y(x) \right) - y(x) = x^3 (3 \ln(x) - 1) \tag{8} \\
& \text{EcuacionNorm} := \text{expand} \left(\frac{\text{lhs}(\text{Ecuacion})}{x \cdot \log(x)} = \frac{\text{rhs}(\text{Ecuacion})}{x \cdot \log(x)} \right) \\
& \quad \text{EcuacionNorm} := \frac{d}{dx} y(x) - \frac{y(x)}{x \ln(x)} = 3x^2 - \frac{x^2}{\ln(x)} \tag{9} \\
& p := \left(\frac{-1}{x \cdot \log(x)} \right); q := \text{rhs}(\text{EcuacionNorm}) \\
& \quad p := -\frac{1}{x \ln(x)} \\
& \quad q := 3x^2 - \frac{x^2}{\ln(x)} \tag{10} \\
& \text{IntP} := \text{int}(p, x) \\
& \quad \text{IntP} := -\ln(\ln(x)) \tag{11} \\
& \text{ExpIntP} := \exp(\text{IntP}) \\
& \quad \text{ExpIntP} := \frac{1}{\ln(x)} \tag{12} \\
& \text{ExpIntPneg} := \exp(-\text{IntP}) \\
& \quad \text{ExpIntPneg} := \ln(x) \tag{13} \\
& \text{IntQ} := \text{int}(\text{ExpIntP} \cdot q, x)
\end{aligned}$$

$$IntQ := \frac{x^3}{\ln(x)} \quad (14)$$

$$\begin{aligned} &> SolucionGeneral := y(x) = C_1 \cdot ExpIntPneg + ExpIntPneg \cdot IntQ \\ &SolucionGeneral := y(x) = C_1 \ln(x) + x^3 \end{aligned} \quad (15)$$

$$\begin{aligned} &> SolGral := dsolve(Ecuacion) \\ &SolGral := y(x) = x^3 + \ln(x) _CI \end{aligned} \quad (16)$$

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