Find the solution $y + 5 = \ln(y')$, $y(0) = 1$. [106 中興精密 7(a)]

[解]原式 $\Rightarrow y' = e^{y+5} \Rightarrow \dfrac{dy}{dx} = e^{y+5} \Rightarrow e^{-(y+5)}dy = dx \Rightarrow \displaystyle\int e^{-(y+5)}dy + C = \int dx$

$-e^{-(y+5)} + C = x \Rightarrow x + e^{-(y+5)} = C$

$y(0) = 1 \Rightarrow 0 + e^{-6} = C \Rightarrow C = e^{-6}$

解為 $x + e^{-(y+5)} = e^{-6}$