Example. Consider the linear, second-order, homogeneous ODE:
\[ y'' + \frac{7}{t} y' + \frac{8}{t^2} y = 0, \quad t > 0 \]

(a) Verify that \( y_1(t) = t^{-4} \) is a solution of the ODE.
(b) Find a second solution, \( y_2(t) \), using reduction of order.
Continued.