Extreme Problem 8

By using the substitution $y = \frac{x}{t^3}$, obtain the general solution of the differential equation $t\frac{dy}{dt} - 3y(t-1) = \left(yt^2\right)^2$, showing that it can be expressed in the form $y = \frac{3}{t^3\left(Ae^{-3t} - 1\right)}$,

Where A is an arbitrary, real valued constant.