1. Use the Runge-Kutta-Fehlberg method with a tolerance TOL=10^{-4}, a maximum step size $\mathrm{hmax} = 0.25$, and a minimum step size $\mathrm{hmin} = 0.05$ to approximate the solution to the initial-value problem. Compare the results to the actual values.

$$y' = te^{3t} - 2y, 0 \leq t \leq 1, y(0) = 0,$$

actual solution $y(t) = \frac{1}{5}te^{3t} - \frac{1}{25}e^{3t} + \frac{1}{25}e^{-2t}$.