1. [8pts] Find the position function $x(t)$ of a moving particle with acceleration $a(t) = \dfrac{4}{(t+1)^3}$, initial position $x_0 = 5$ and initial velocity $v_0 = 1$.

2. [8pts] Find a general solution of the DE: $y\prime + y = e^{2x} y^2$