1. [14 points] Find explicit general, real-valued solutions for each of the following. *(Note that minimal partial credit will be given on this problem.)*

  a. [7 points] $\frac{dy}{dx} = -\frac{\cos x}{\sin x} y + \frac{1}{\sin x}$.

  b. [7 points] $\frac{dy}{dx} - (x-1)y^2 = x - 1$.