1. (5 points) Match the differential equation with its direction field.

A. \( y' = 2-y \)
B. \( y' = x-y+1 \)
C. \( y' = x^2-y^2 \)
D. \( y' = x \sin y \)

I.  

II.  

III.  

IV.
2. (5 points) Solve the differential equation \( \frac{dy}{dt} = \frac{t}{e^{y+t^2}} \).