

What is the best statement that you can make about the existence and uniqueness of the solution of the following initial value problems?

(a) $y' = \sin(ty) + 1/t, \quad y(1) = 2$

(b) $y' + (1/(1 - t^2))y = e^t, \quad y(0) = 1.$

(c) $y'' + (1/(2 - t))y' + 4y = |t|, \quad y(0) = 2, \quad y'(0) = 3.$