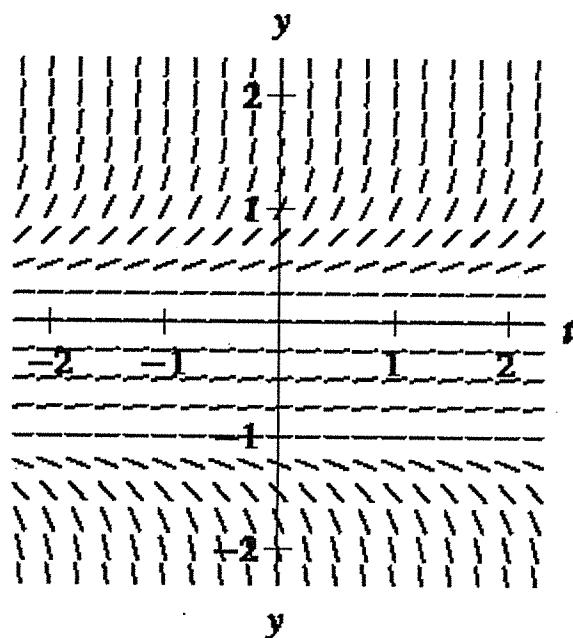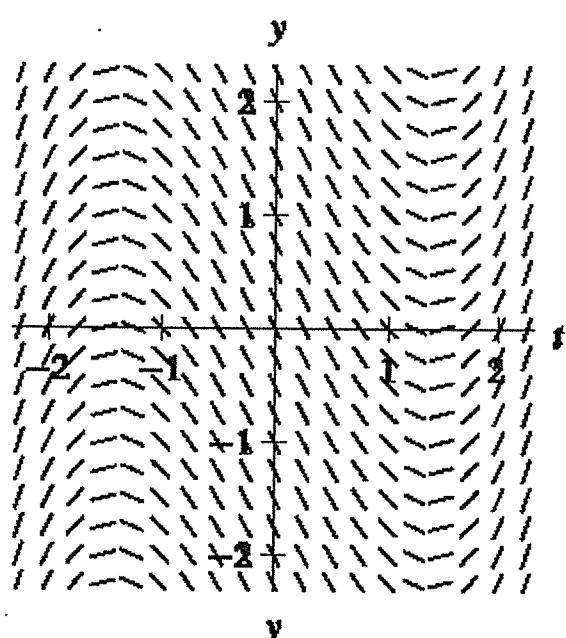**16.** Eight differential equations and four slope fields are given below. Determine the equation that corresponds to each slope field and state briefly how you know your choice is correct. You should do this exercise without using technology.

(i) $\dfrac{dy}{dt} = y^2 + y$ (ii) $\dfrac{dy}{dt} = y^2 - y$ (iii) $\dfrac{dy}{dt} = y^3 + y^2$ (iv) $\dfrac{dy}{dt} = 2 - t^2$

(v) $\dfrac{dy}{dt} = ty + ty^2$ (vi) $\dfrac{dy}{dt} = t^2 + t^2 y$ (vii) $\dfrac{dy}{dt} = t + ty$ (viii) $\dfrac{dy}{dt} = t^2 - 2$
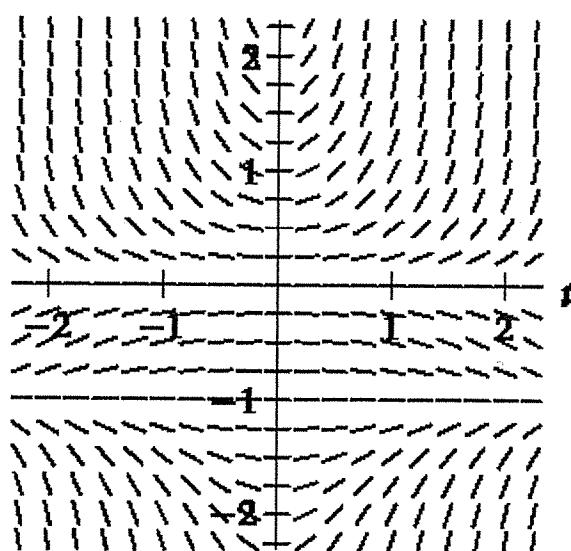
(a)

(b)

(c)

(d)