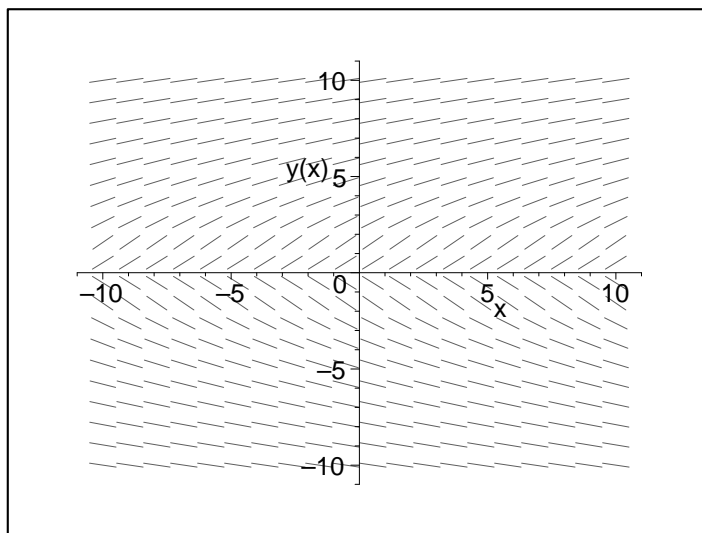


1. (6 points) Which of the following differential equations has the slope field given in the figure? (Circle the letter of each correct answer.)

- a.  $\frac{dy}{dx} = \frac{2x}{1+x^2}$       b.  $\frac{dy}{dx} = e^{-y^2}$       c.  $\frac{dy}{dx} = \frac{2x^2}{1+x^4}$
- d.  $\frac{dy}{dx} = \frac{2y}{1+y^2}$       e.  $\frac{dy}{dx} = e^{-x^2}$       f.  $\frac{dy}{dx} = \frac{2y^2}{1+y^4}$



2. (8 points) Circle “True” or “False” for each of the following statements. No explanation is necessary. (Remember that “True” means the statement is always true.)

(a) The function  $y(t) = 0$  is an equilibrium solution of the differential equation  $dy/dt = y + t$ .

True.      False.

(b) If  $P(t)$  is a solution of the logistic differential equation,  $dP/dt = .5P(200 - P)$ , then so is the function  $2P(t)$ .

True.      False.