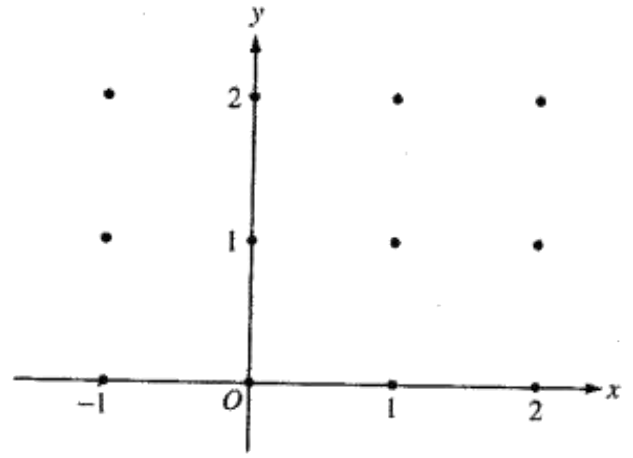


D-DE4

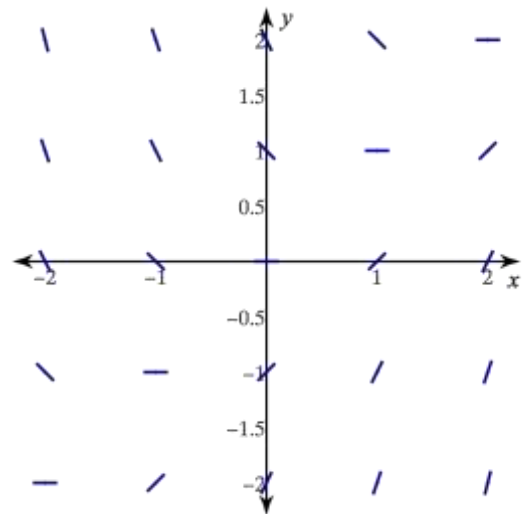
Consider the differential equation $\frac{dy}{dx} = \frac{x+1}{y^2}$

1. On the axes provided, sketch a slope field at the points indicated.
2. While only some points are graphed, the slope field for #1 is defined for many others. Describe all points in the xy -plane that have negative slope.



3. Choose the differential equation that could be represented by the given slope field.

- A) $\frac{dy}{dx} = \frac{x}{y}$ B) $\frac{dy}{dx} = xy$
 C) $\frac{dy}{dx} = x - y$ D) $\frac{dy}{dx} = x + y$



D-DE1

4. The population of foxes F varies in a twisted tango with the population of rabbits, R . The rate of change with respect to time of the fox population is directly proportional to the product of the number of foxes and the difference in the fox and rabbit populations. Write a differential equation that models this situation.

D-DE3:

5. Consider the differential equation $y' = 3y - 5$. Find the general solution y .

D-DE2: Consider the differential equation $\frac{dy}{dx} = 6y^3x^2$

6. Find the particular solution with initial condition $(1,2)$