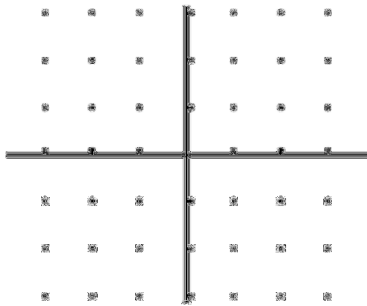3.     Consider the differential equation given by $\dfrac{dy}{dx} = \dfrac{x}{y}$ .

    a.     On the axes provided, sketch a slope field for the given differential
           equation.



    b.     Sketch a solution curve that passes through the point (0, 1) on your
           slope field.
    c.     Find the particular solution $y = f(x)$ to the differential equation with
           the initial condition $f(0) = 1$.

    d.     Sketch a solution curve that passes through the point (0, –1) on your slope field.
    e.     Find the particular solution $y = f(x)$ to the differential equation with the initial
           condition $f(0) = -1$.

4.     A curve has slope $2x + 3$ at each point $(x, y)$ on the curve. Which of the following is an
       equation for this curve if it passes through the point (1, 2)?

    a.     y = 5x - 3

    b.     $y = x^2 + 1$
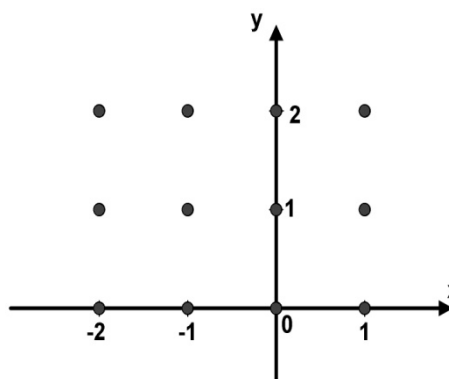
    c.     $y = x^2 + 3x$

    d.     $y = x^2 + 3x - 2$

    e.     $y = 2x^2 + 3x - 2$
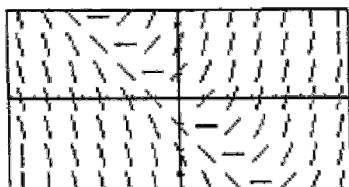
1.     Sketch a slope field for the given differential equation at the points indicated.
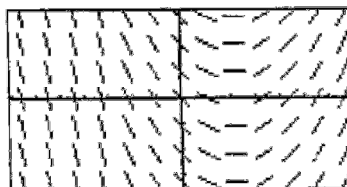
$$\frac{dy}{dx} = (x+1)^2 y$$

2)  Fill in the appropriate letter slope field in the blanks below next to its matching differential equation.
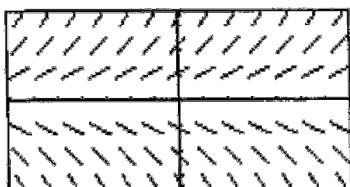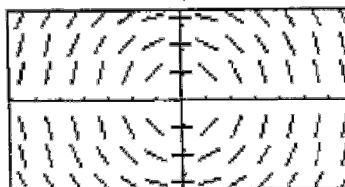
(A)

(B)

(C)

(D)

_____ $\dfrac{dy}{dx} = .5x - 1$

_____ $\dfrac{dy}{dx} = -\dfrac{x}{y}$

_____ $\dfrac{dy}{dx} = .5y$

_____ $\dfrac{dy}{dx} = x + y$