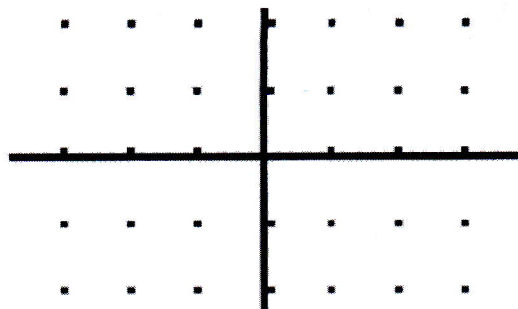


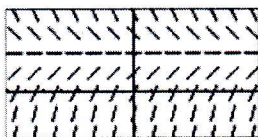
3. Sketch the graph of the possible solution to the differential equation $\frac{dy}{dx} = x + y$, $y(0) = 1$



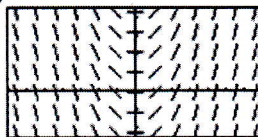
4.

Match the slope fields with their differential equations.

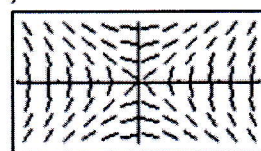
(A)



(B)



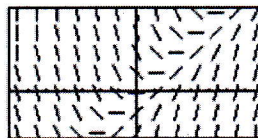
(C)



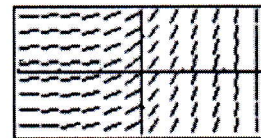
(D)



(E)



(F)



I. $\frac{dy}{dx} = e^x$

II. $\frac{dy}{dx} = \frac{x}{y}$

III. $\frac{dy}{dx} = 2 - y$

IV. $\frac{dy}{dx} = x$

V. $\frac{dy}{dx} = x - y$

VI. $\frac{dy}{dx} = \sin x$

5. Find the particular solution $y = f(x)$ to the given differential equations at the given initial condition.

a) $\frac{dy}{dx} = \frac{x}{y}$, $(1, -2)$

b) $\frac{dy}{dx} = 2xy^2$, $(0, \frac{1}{3})$

c) $\frac{dy}{dx} = 3xy$, $(0, 6)$

d) $\frac{dy}{dx} = \sqrt{xy}$, $(0, 4)$

e) $\frac{dy}{dx} = (y - 7)$, $(0, 10)$

f) $\frac{dy}{dx} = \frac{x^2}{e^{3y}}$, $(-1, 0)$