Draw a slope field for each of the following differential equations.

1. \( \frac{dy}{dx} = x + 2y \)

2. \( \frac{dy}{dx} = \frac{2x}{y} \)

Match the differential equation with its slope field.

3. \( \frac{dy}{dx} = xy \)

(A) [Slope Field]

(B) [Slope Field]

(C) [Slope Field]

(D) [Slope Field]

4. \( \frac{dy}{dx} = x - y \)

(A) [Slope Field]

(B) [Slope Field]

(C) [Slope Field]

(D) [Slope Field]

5. Match the slope field to the differential equation.

(A) \( \frac{dy}{dx} = x + y \)

(B) \( \frac{dy}{dx} = \frac{x}{y} \)

(C) \( \frac{dy}{dx} = \frac{y}{x} \)

(D) \( \frac{dy}{dx} = (x - 1)y \)

(E) \( \frac{dy}{dx} = x(y - 1) \)

6. Match the slope field to the differential equation.

(A) \( \frac{dy}{dx} = y - x \)

(B) \( \frac{dy}{dx} = -\frac{x}{y} \)

(C) \( \frac{dy}{dx} = -\frac{y}{x} \)

(D) \( \frac{dy}{dx} = (x - 1)y \)

(E) \( \frac{dy}{dx} = x(y - 1) \)
7. The figure below shows the slope field for the differential equation \( \frac{dy}{dx} = 2xy \)

a) Calculate \( \frac{dy}{dx} \) at the point \((-2,3)\) and verify that the result agrees with the figure.

b) Sketch the graph of the particular solution of the differential equation that contains the point \((0,1)\).

8. The figure below shows the slope field for the differential equation \( \frac{dy}{dx} = e^x y \)

a) Calculate \( \frac{dy}{dx} \) at the point \((0,-3)\) and verify that the result agrees with the figure.

b) Sketch the graph of the particular solution of the differential equation that contains the point \((0,2)\).

ANSWERS TO CORRECTIVE ASSIGNMENT

1. 2. 3. D 4. C 5. B 6. A

7. a. \( y - 3 = -12(x + 2) \)
   b. 

8. a. \( y + 3 = -3x \)
   b. 