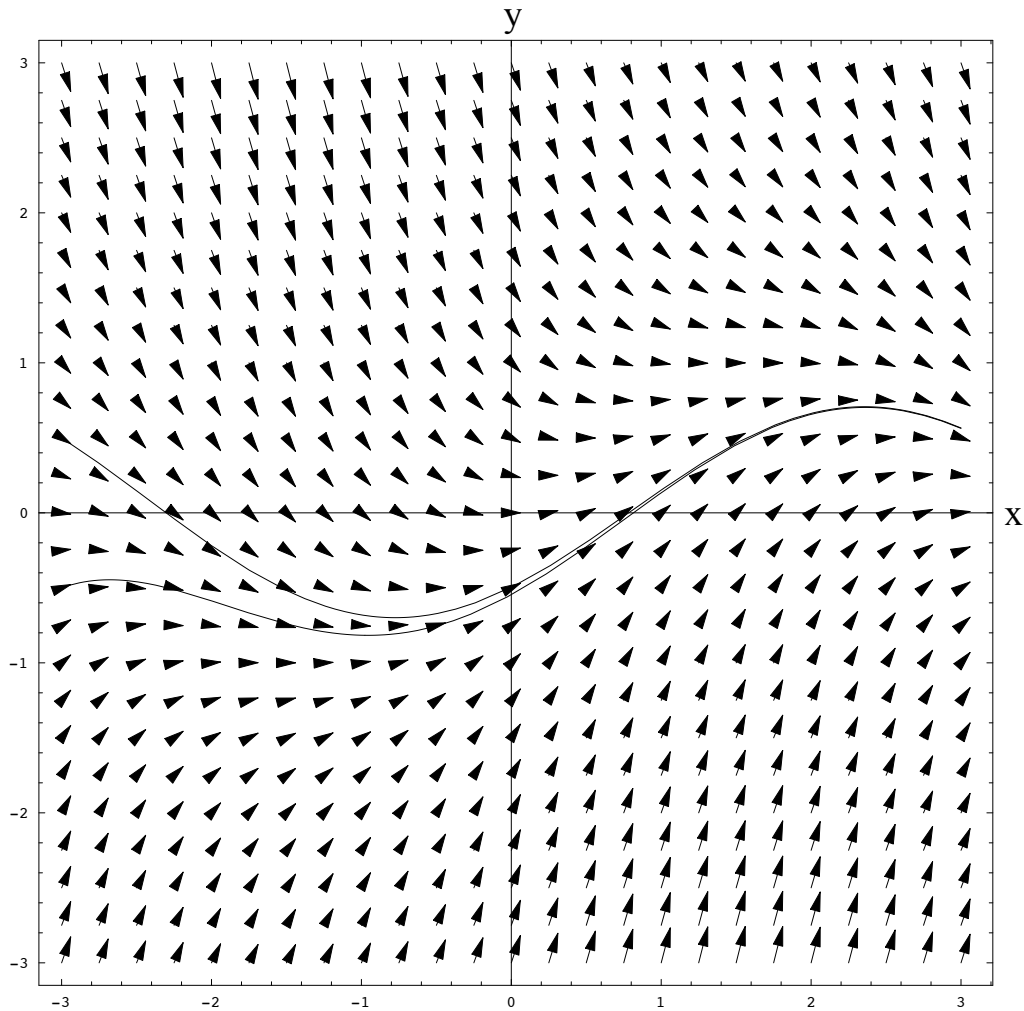Math 3280 Worksheet 4: Slope fields.

Group members (2 to 4): _____

Only hand in 1 sheet per group.

(1) Sketch in the solution curves $y(x)$ with initial conditions $y(-3) = 1$ and $y(3) = 1$. You can assume that separate solution curves never cross. Briefly describe how other solutions behave as x increases.

(2) Match the following ODEs to the graphs below, which show some representative solutions. In each plot, the x-axis is horizontal and the y-axis is vertical. For each match briefly explain your reasoning.

(a) $y' = \sin(xy)$

(b) $y' = y^2 - 1$

(c) $y' = 2x + y$

(d) $y' = \sin(x)\sin(y)$

(e) $y' = y/x^2 - 1$

(f) $y' = \sin(3x)$

I

II

III

IV

V

VI