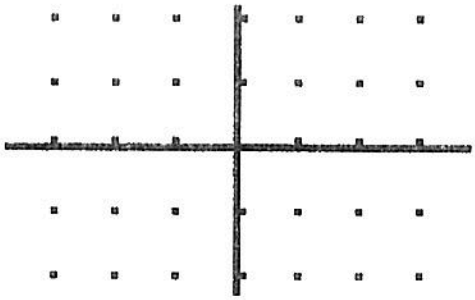
Name:_____ Date: _____

AP Calculus AB: Slope Fields (Directional Fields) Ms. Loughran

A slope field is a picture of the family of general solutions of a differential equation. This picture is created by using small segments of tangent lines which approximate the curves at each point.

Consider $\frac{dy}{dx} = y$. In words, any solution to this differential equation has the property that at any point in the plane, the slope of the curve equals the y-coordinate there. Let's draw a picture.

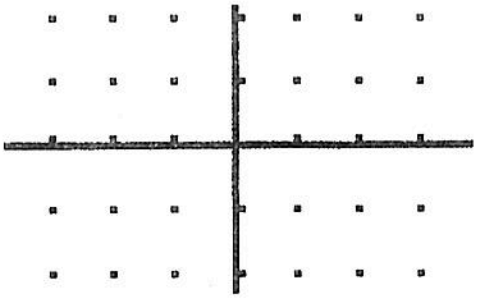


Within the slope field, the ghosts of the solution curves are lurking. The slope field is a set of signposts pointing you in the direction you should go at each point.

Algebraic solution:

Let's try another one.

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



What does the solution of this differential equation appear to be?

Let's find it.