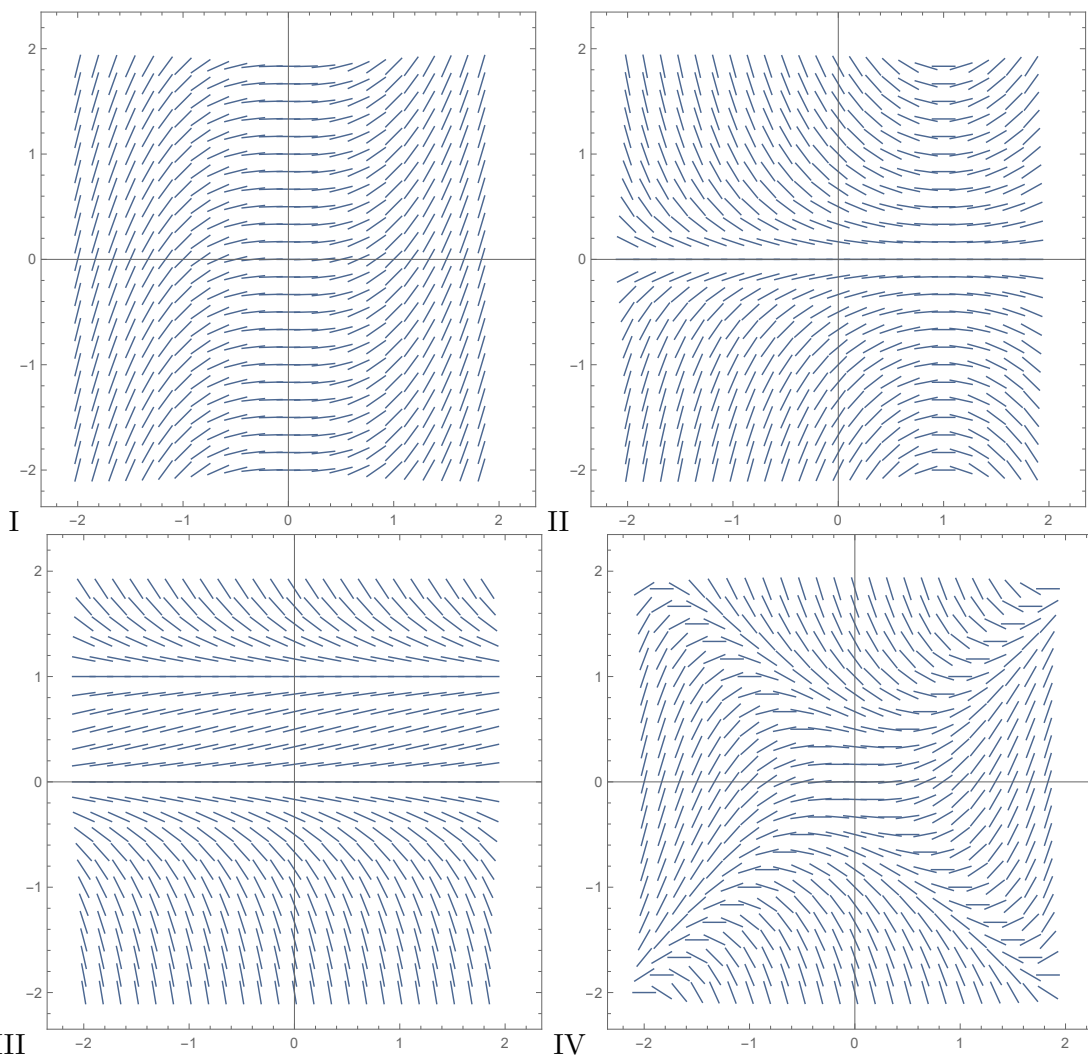


MATH 2300-016 QUIZ 12 (take home, due April 16th) Name: _____

1. Match the slope fields below (labeled I, II, III, IV) with the differential equations below.



_____ $\frac{dy}{dx} = x^2$

_____ $\frac{dy}{dx} = y - y^2$

_____ $\frac{dy}{dx} = x^2 - y^2$

_____ $\frac{dy}{dx} = xy - y$

2. Use Euler's method with step size $1/2$ to approximate $y(2)$ where y is a solution of the initial value problem

$$y' = x - y, \quad y(0) = 1,$$

filling in the information in the table below.

n	x_n	y_n	$y'(x_n)$
0			
1			
2			
3			
4			

3. Solve the following initial value problems.

(a) $y' + y^2 \sin x = 0$, $y(0) = -1/2$

(b) $y' = \frac{x^2}{y(1+x^3)}$, $y(0) = -1$