Arts & Science 1D06 Quiz #9 Solutions

February 24, 2016

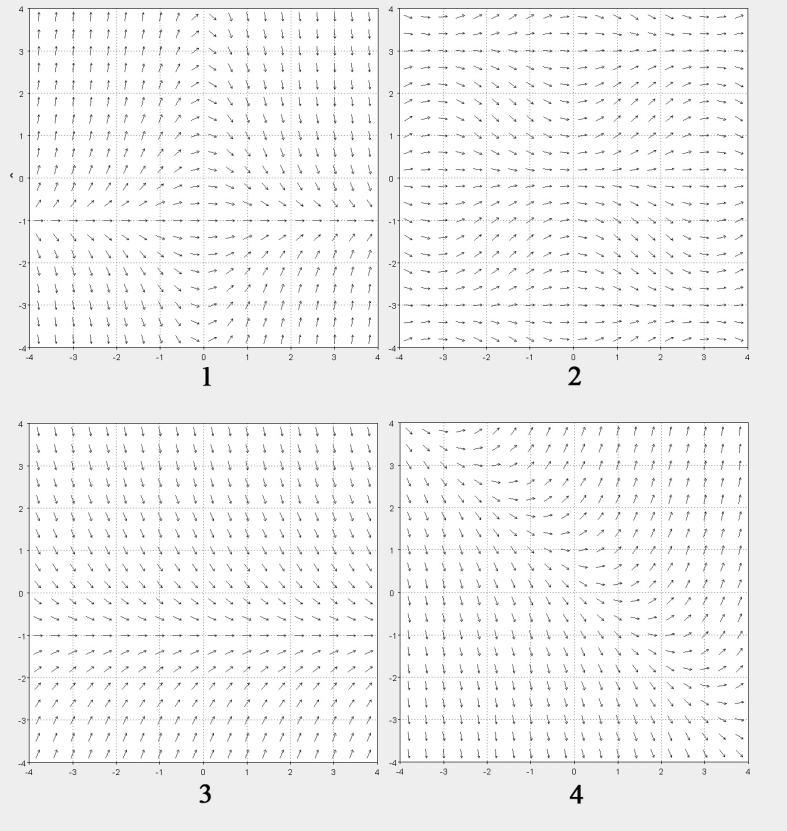
Full Name:_____ Student # :_____

TA:_____

Please provide detailed solutions to the problems below. Correct responses without justification may not receive full credit. The use of a calculator is permitted.

[10 marks]

(1.) Match the differential equation with its direction field, giving reasons for your answers.



a) $y' = -1 - y$

This is 3. Note that the slope depends only on y, so the slopes are the same along each line parallel to the x-axis. Also, the slope is zero when $y = -1$

b) $y' = x + y - 1$

This is 4. Along the line $y = -x$ we have the slope is -1, as shown in 4.

c) $y' = x(-1 - y)$

This is 1. The slope is zero when $x = 0$ or $y = -1$.

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

This is 2. The slope is zero when x or y is 0 or $\pm\pi$.