Homework 32: 11.2 slope fields

11.2 # 9, 14, 17. (Use the slope fields on this handout.)
Additional problems:

(1) Use *Mathematica* to draw three plots on the range $-2\pi \le x \le 2\pi$:
   (a) a slope field for $dy/dx = \sin x$ (problem 2 from last homework).
   (b) a graph of the particular solution for $y(\pi) = 2$.
   (c) the solution superimposed on the slope field.

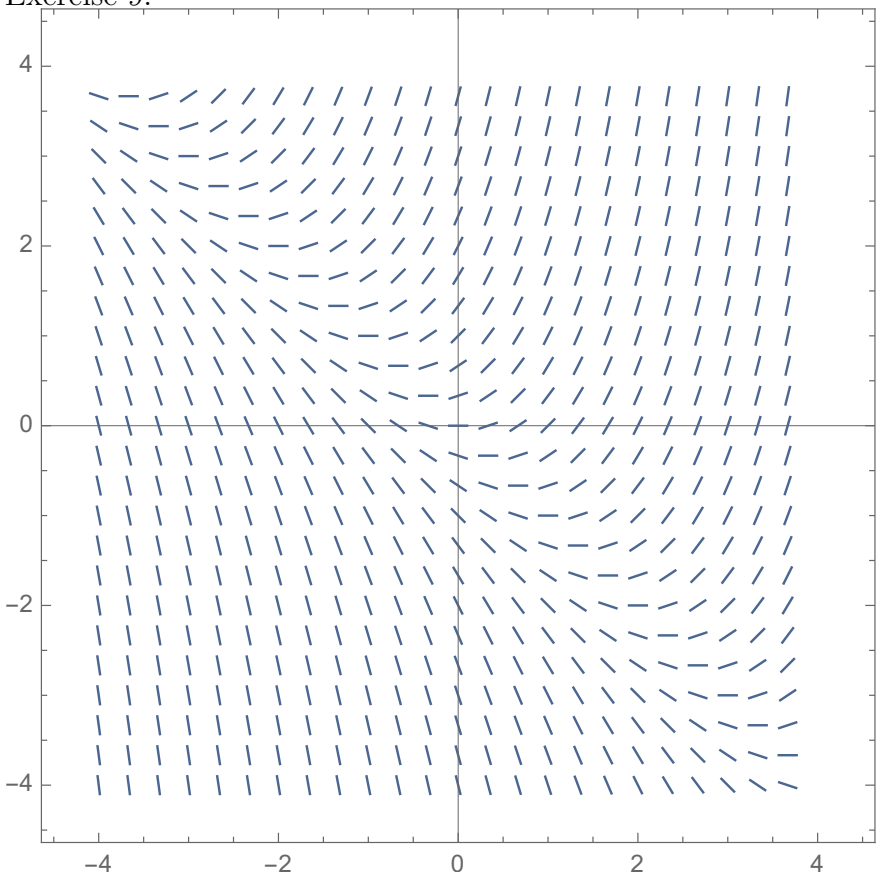
(2) Sketch, by hand, the slope field for $y' = x - y$ on the range $-2 \le x, y \le 2$. Include slopes at $(0, 0)$, $(1, 2)$, $(-1, 2)$, $(-1, -2)$, and $(2, -1)$.

(3) (a) Plot the slope field for $y' = y - x^2$ on the range $-5 \le x \le 5$ and $-4 \le y \le 10$.
   (b) Superimpose on the slope field two different solutions: $y = x^2 + 2x + 2$ and $y = x^2 + 2x + 2 - 2e^x$.
   See, a differential equation can have two very different functions as solutions!

(4) Bring hw33 handout to class, with at least (1a) filled out.

(5) Bring laptop to class.

Exercise 9.



Problem 14.