Gradescope Assignment: Due 2/1/21
0 pts for no work
2 pts for attempt
4 pts for full answer

1. (Short) Problem 1.2.1 from the textbook.

2. (Weekend Problem) Solve via separation-of-variables and integration the initial-value problem

$$\frac{dy}{dt} = 1 - y^2, \ y(0) = y_0.$$

Find all equlibrium solutions, sketch the affiliated phase plane, and describe the stability of the equilibria. What information from the phase plane analysis can you connect to the exact solution you found?