

6. [6 points] Consider the following differential equation

$$\frac{dy}{dx} = (x - y)(y - 2)$$

a. [2 points] Find all the equilibrium solutions of the differential equation (if any). If the differential equation has no equilibrium solutions, write none.

b. [4 points] Use inequalities to describe the regions in the slope field of the differential equation where the solution curves are increasing.