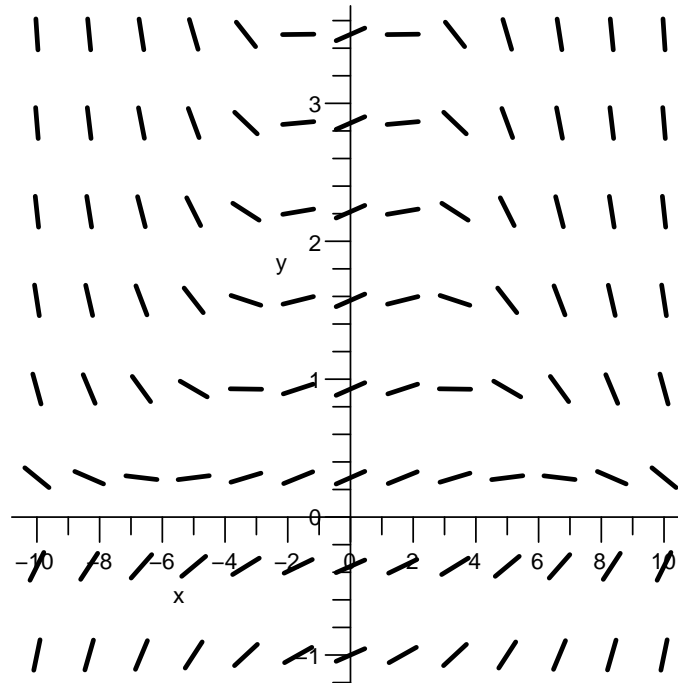Problem statement The horizontal and vertical axes on the graph below have different scales. x goes from -10 to 10 and y goes from -1 to 3.5. The graph is a direction field for the differential equation $y' = \frac{1}{10}\left(1 - \frac{1}{10}yx^2\right)$.

a) Sketch the solution curve which passes through $(0, 1)$ **on the graph above**.

b) How many critical points does this solution curve seem to have? What types of critical points do they seem to be? If (x_0, y_0) is a critical point, find an exact algebraic relationship between x_0 and y_0.

Comment The equation *can't* be solved in terms of standard functions. Information from the graph and the differential equation should be used.