HW5. Investigate the behavior of the system

$$x' = x(2 - x - y) \tag{1}$$
$$y' = y(x - 1) \tag{2}$$

in the plane $(t, x) \in \mathbb{R}^2$. In particular:

i) Find the curves $V = \{x' = 0\}$, $H = \{y' = 0\}$. Identify the areas where $x' > 0$ or $x' < 0$ and where $y' > 0$ or $y' < 0$, respectively.

ii) Find (all) the equilibrium points.

iii) Sketch the solution curves. In particular, outline the dynamics on the coordinate axes ($x = 0$ or $y = 0$).

Let the pictures be reasonably large (i.e. about 10x10 cm).