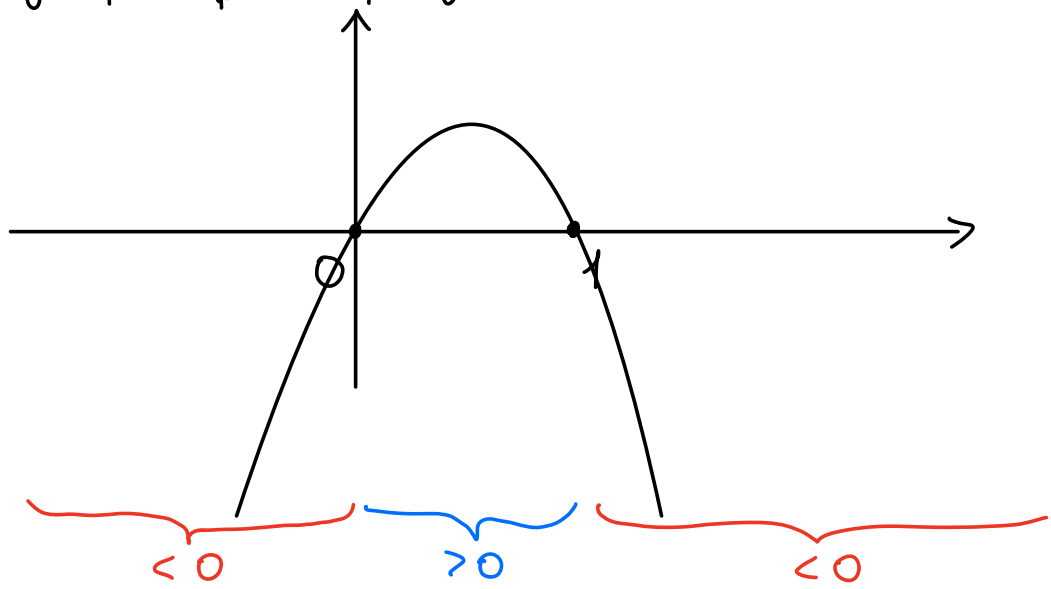
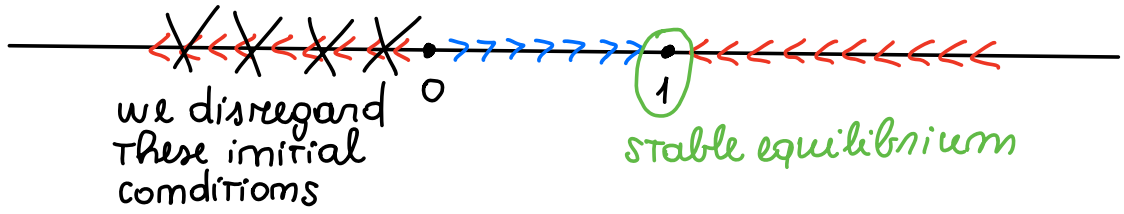
LOGISTIC EQUATION: PHASE LINE

$$y'(\tau) = y(\tau)\,(1 - y(\tau))$$

The graph of the polynomial $y(1-y)$ is



Hence the phase line is given by

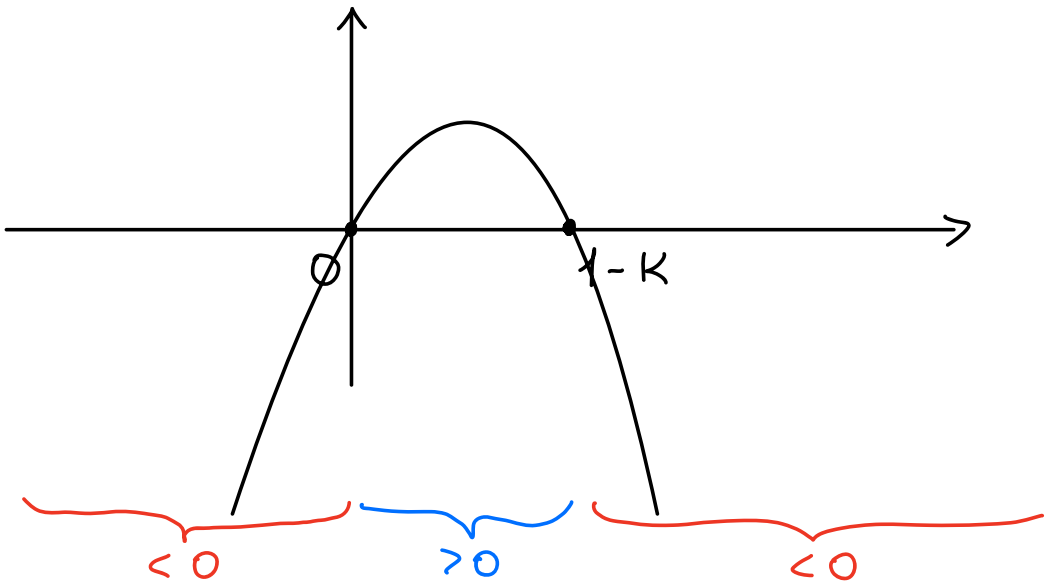


LOGISTIC EQUATION WITH PROPORTIONAL HARVESTING: PHASE LINE

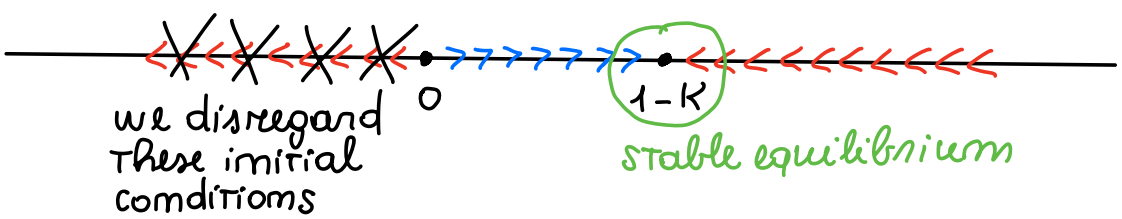
$$y'(\tau) = y(\tau)\,(1 - y(\tau)) - K\,y(\tau)$$

- Case $K < 1$

The graph of the polynomial $Y(1-K-Y)$ is

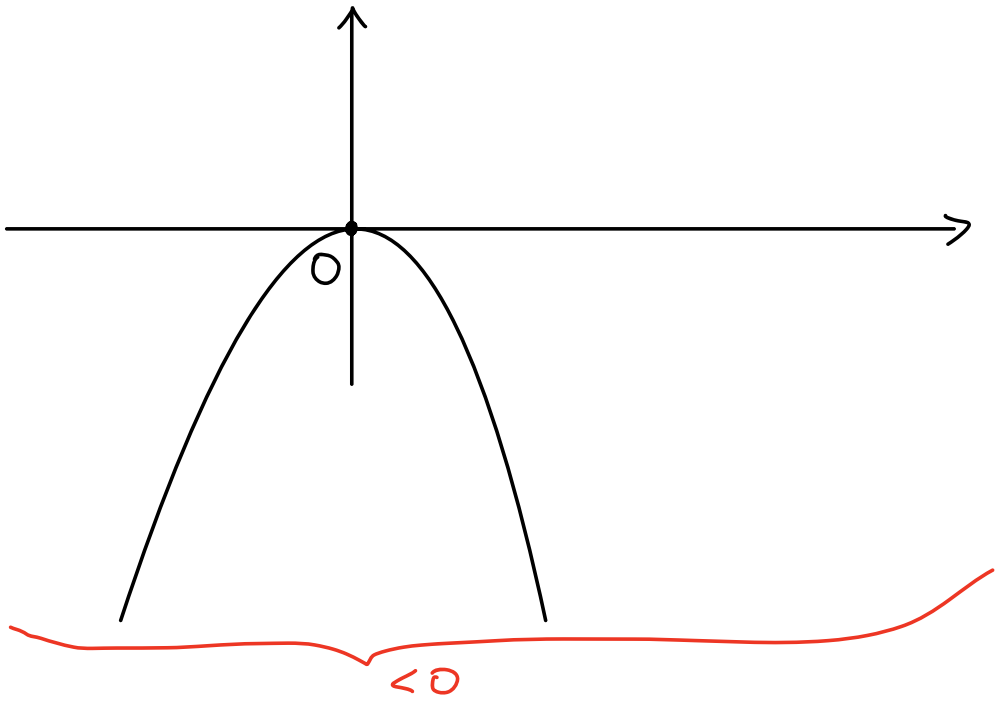


Hence the phase line is given by

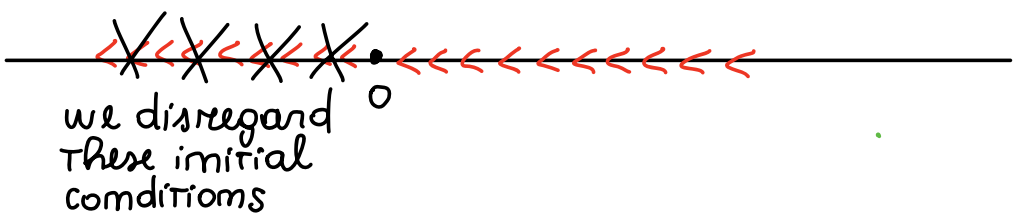


• Case $K = 1$

The graph of the polynomial $-y^2$ is

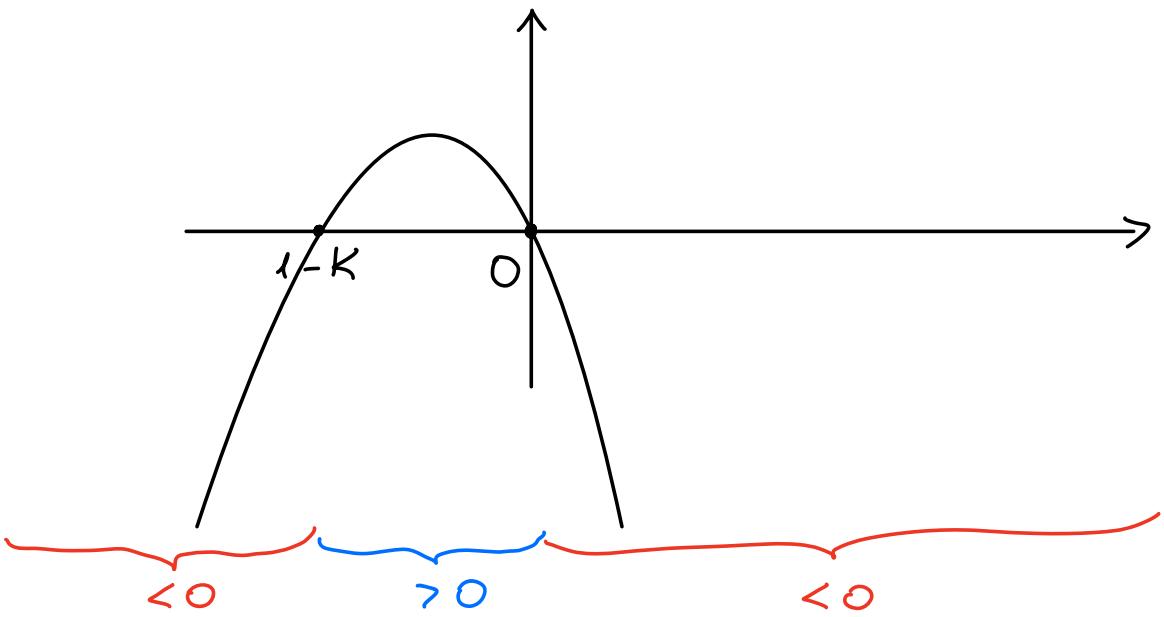


Hence the phase line is given by



• Case $K > 1$

The graph of the polynomial $Y(1-K-Y)$ is



Hence the phase lime is given by