Ejercicio de la Parábola

viernes, febrero 19, 2021 8:32 PM

$$\dot{X} = Y - X^2 + 3$$

$$\dot{Y} = Y - X + 1$$

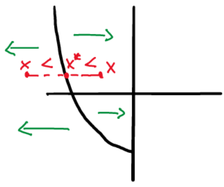
Paso 1

$$\left.\begin{array}{l} \dot{X}=0 \rightarrow Y = X^2 - 3 \\ \dot{Y}=0 \rightarrow Y = X - 1 \end{array}\right\} \rightarrow \begin{array}{l} X_1 = 2 \\ \downarrow \\ Y_1 = 1 \end{array} \; ; \; \begin{array}{l} X_2 = -1 \\ \downarrow \\ Y_2 = -2 \end{array}$$

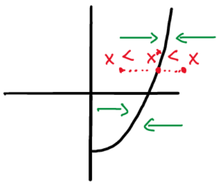
Teoría

Paso 2:

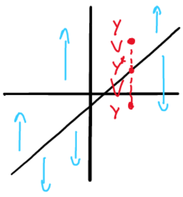
Si $X<0 = \frac{\partial \dot{X}}{\partial X} > 0$ —
- $X > X^* \rightarrow X \rightarrow$
- $X < X^* \rightarrow X \leftarrow$



Si $X>0 = \frac{\partial \dot{X}}{\partial X} < 0$ —
- $X > X^* \rightarrow X \leftarrow$
- $X < X^* \rightarrow X \rightarrow$



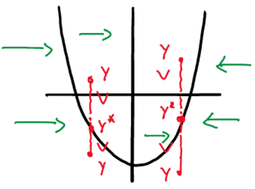
$\frac{\partial \dot{Y}}{\partial Y} > 1$ —
- $Y > Y^* \rightarrow Y \uparrow$
- $Y < Y^* \rightarrow Y \downarrow$



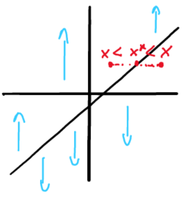
Práctica

Paso 2:

$\frac{\partial \dot{X}}{\partial Y} > 0$ —
- $Y > Y^* \rightarrow X \rightarrow$
- $Y < Y^* \rightarrow X \leftarrow$



$\frac{\partial \dot{Y}}{\partial X} > 1$ —
- $X > X^* \rightarrow Y \uparrow$
- $X < X^* \rightarrow Y \downarrow$



Paso 3