



from the graph get  $x_1^* = 0$  (unstable)  $x_2^* = 1$  (stable)

$$\text{let } \dot{x} = x(1-x) = 0$$

$$x_1^* = 0 \quad x_2^* = 1$$

$$\text{Deriv } f(x) = 1 - 2x$$

$$\therefore f'(x_1^*) = 1 - 2x_1^*$$

$$= 1$$

$$\therefore f''(x_2^*) = 1 - 2x_2^*$$

$$= -1$$

$$\therefore x_1^* = 0 \text{ (unstable)}$$

$$x_2^* = 1 \text{ (stable)}$$