Mathematics 172

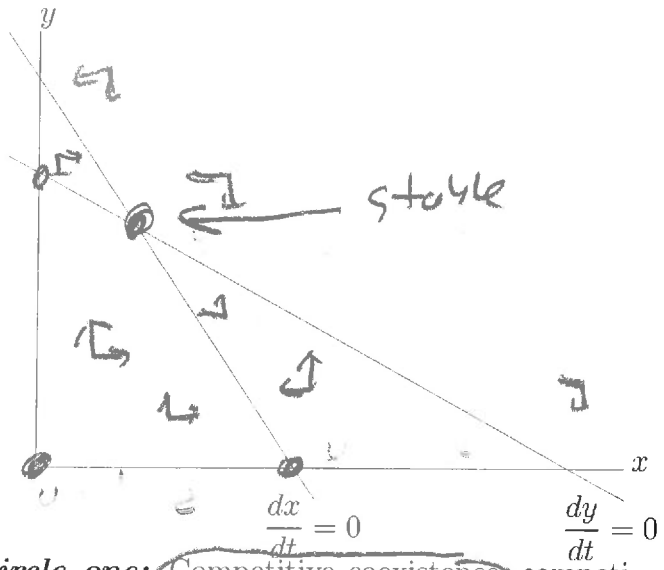
Quiz 22 Name: Key

You must show your work to get full credit.

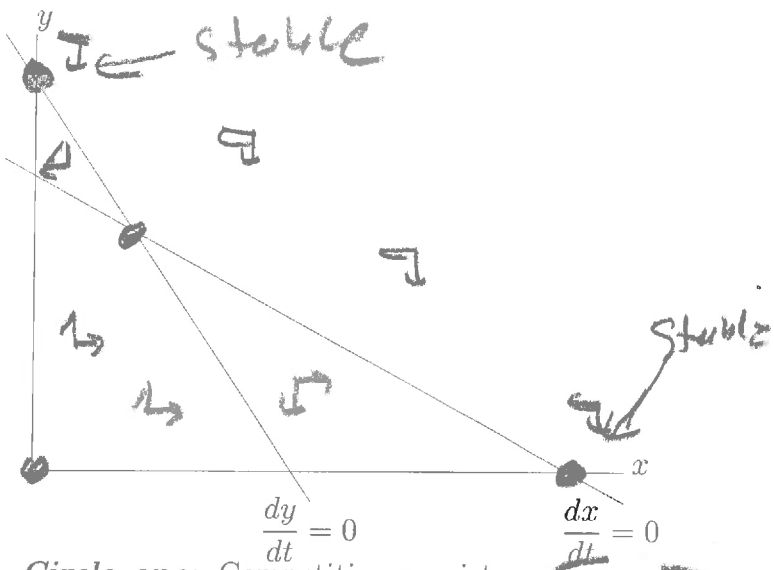
The following are phase diagrams for the equations

$$\frac{dx}{dt} = r_1\left(\frac{K_1 - x - \alpha y}{K_1}\right)$$
$$\frac{dy}{dt} = r_2\left(\frac{K_2 - \beta x - y}{K_2}\right)$$

of competing species. In each of the figure label the rest points (or equilibrium points) with a large filled in circle ● and label which are stable. Also put in some arrows in each region showing which way the points (x, y) are moving.



Circle one: Competitive coexistence, competitive exclusion, x-species dominates, or y-species dominates



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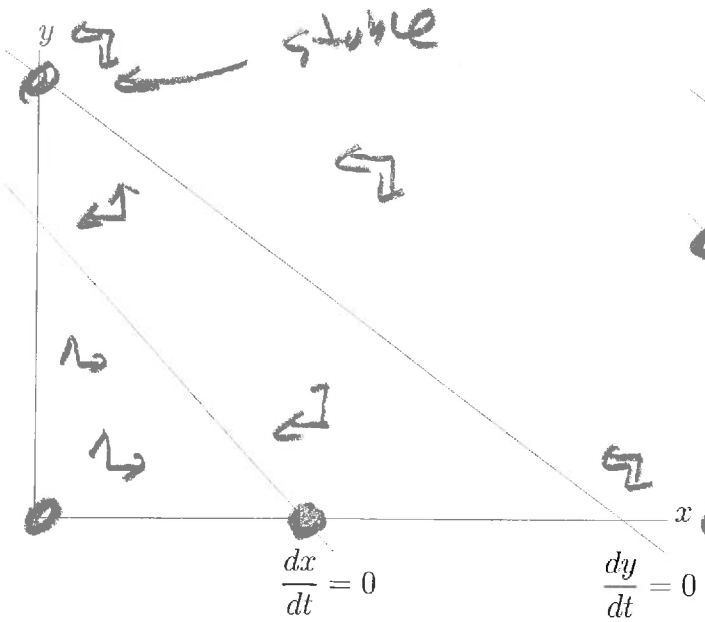

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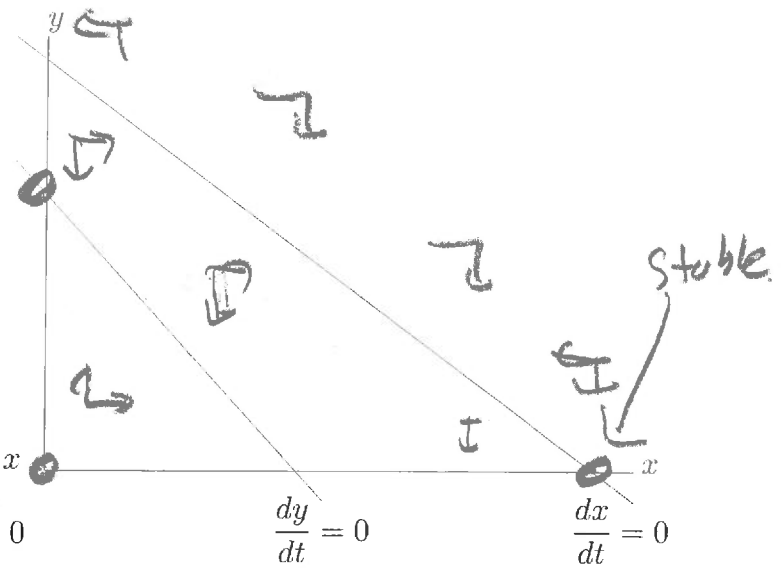

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