HW #2

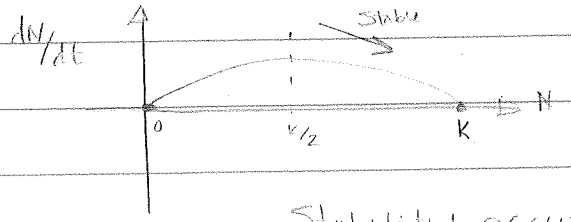
1) (a) Given $dN/dt = rN[1-(N/K)^\theta]$,

We find the equilibria of the model by setting dN/dt equal to zero:

$r\hat{N}[1-(\hat{N}/K)^\theta] = 0$

This is true when $\hat{N} = 0$ or K

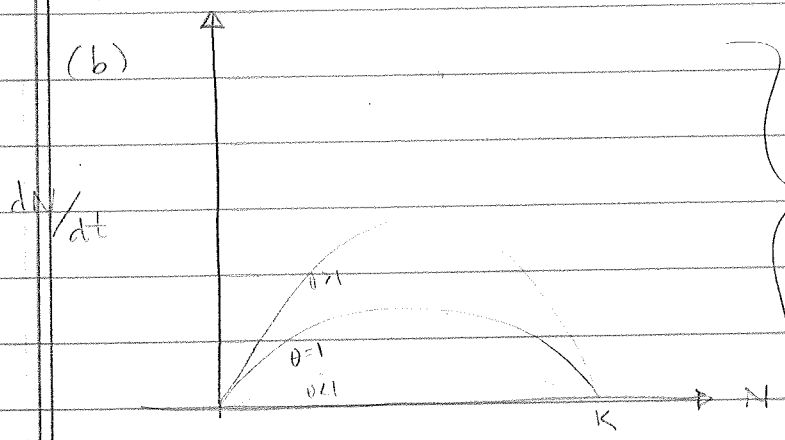
• Finding the stability



Stable equilibriums have a negative slope.

Stability occurs: $\frac{K}{2} < N < K$,

(b)



Increasing the value of θ cause an increase in dN/dt, resulting in a parabola with a higher local maximum.