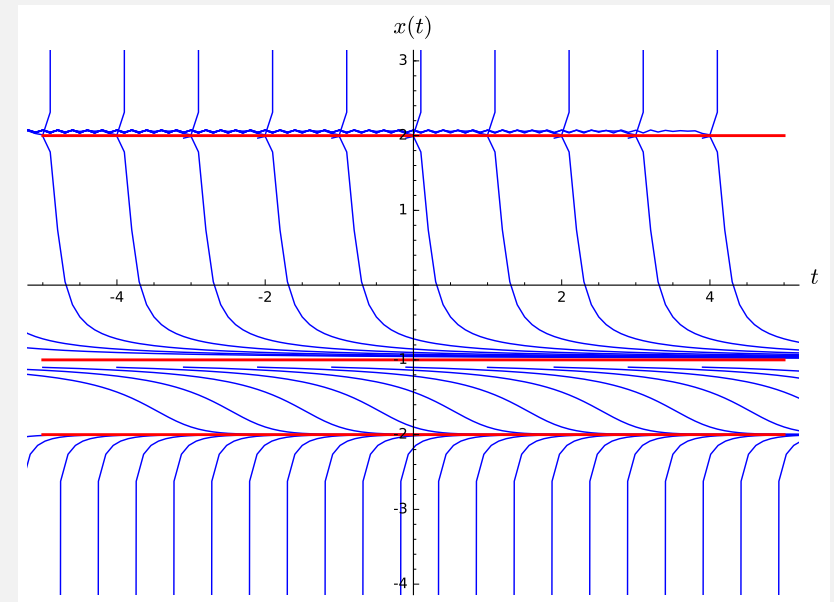
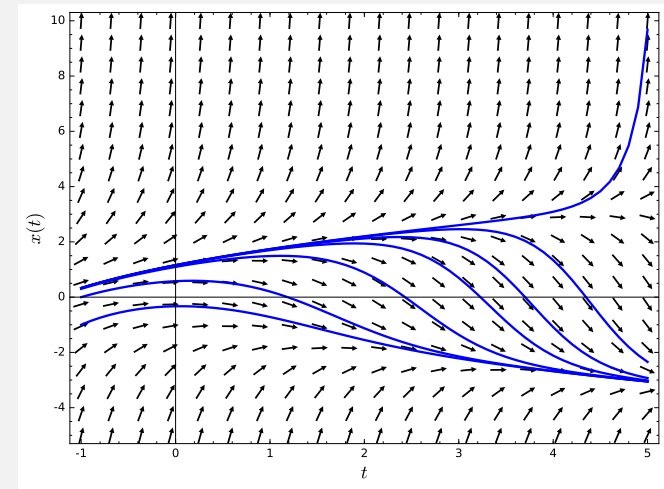
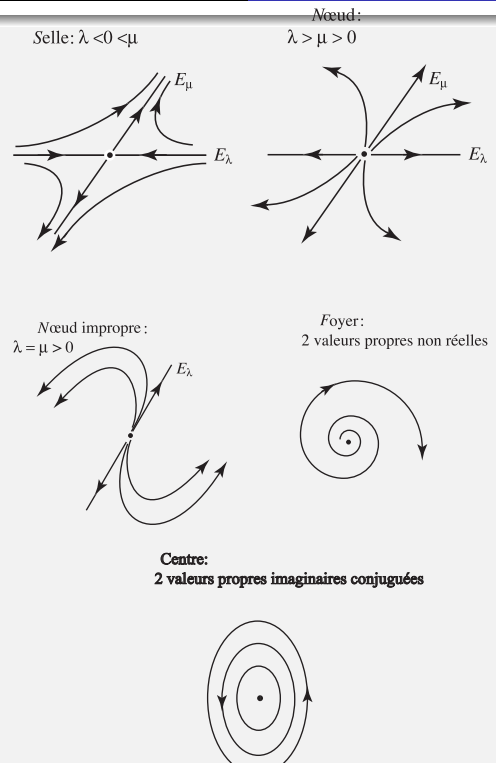


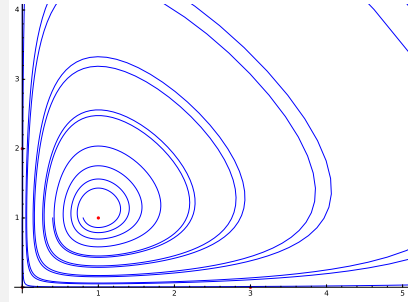
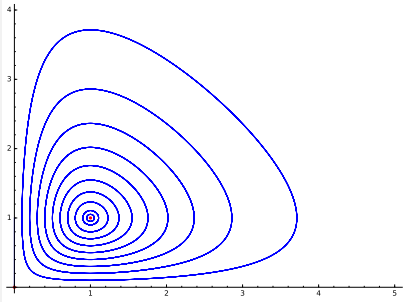
Portrait de phase pour  $y' = (y-3)(y+2)$  :  $y = -2$  (resp.  $y = 3$ ) est un point d'équilibre stable (resp. instable)



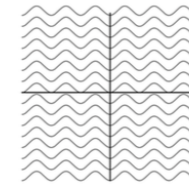
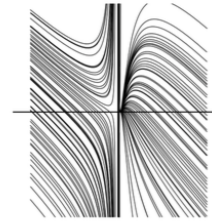
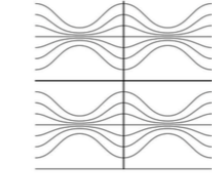
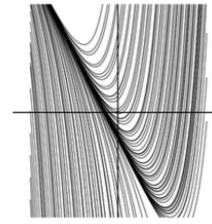
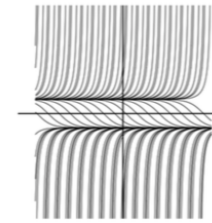
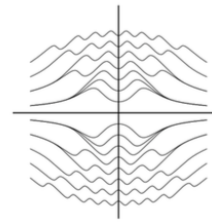
Portrait de phase pour  $y' = (y^2 - 4)(y + 1)^2$  :  $y = -2$  (resp.  $y = 2, y = -1$ ) est un point d'équilibre stable (resp. instable, ni stable, ni instable)



Champ de directions pour l'éd  $y' = y^2/2 - x$  dans le pavé  $[-1, 5] \times [-5, 10]$  et quelques trajectoires.



Le portrait de phase de Lotka-Volterra  $(x', y') = (x(1 - y), -y(1 - x))$  (trajectoires périodiques) et de sa perturbation  $(x', y') = (x(1 - y) + x^2/10, -y(1 - x))$ .



- $x' = x^2 - 1$
- $x' = x/(1 - t^2)$
- $x' = \sin t \sin x,$
- $x' = \sin(tx)$
- $x' = 2t + x$
- $x' = \sin(3t)$

Associer portrait et ÉD!