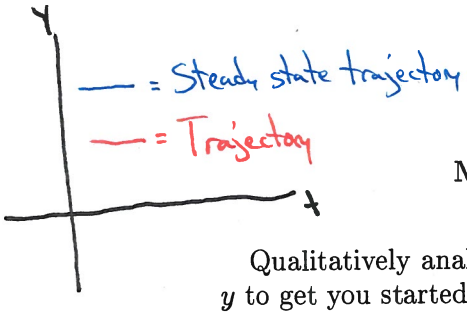
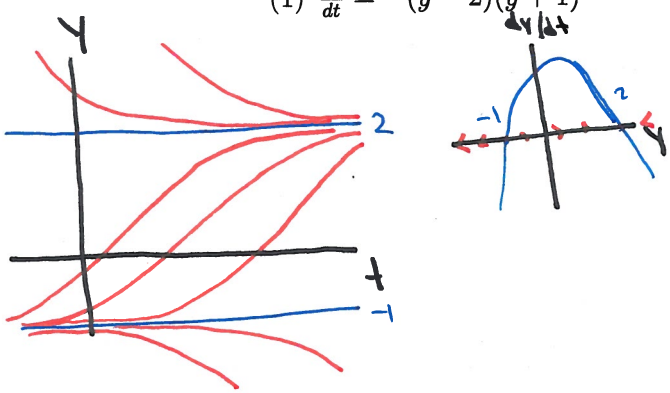
Phase Portrait



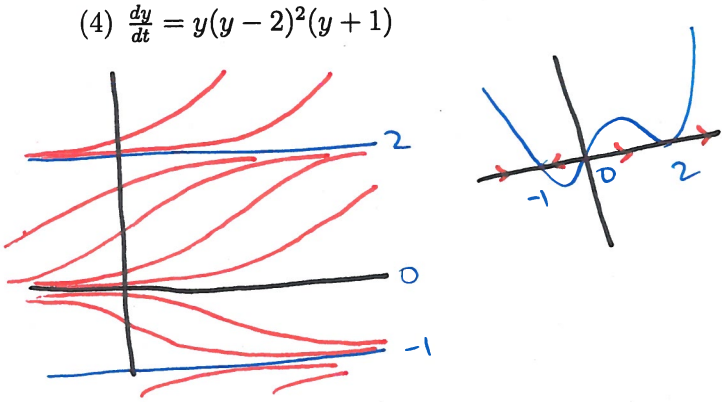
MATH 102:112, CLASS 18 (TUE NOV 6)

Qualitatively analyze the following differential equations. (Use the graph of dy/dt vs y to get you started.)

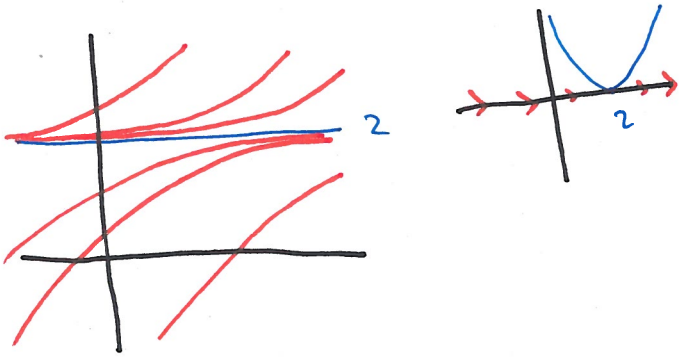
(1) $\frac{dy}{dt} = -(y-2)(y+1)$



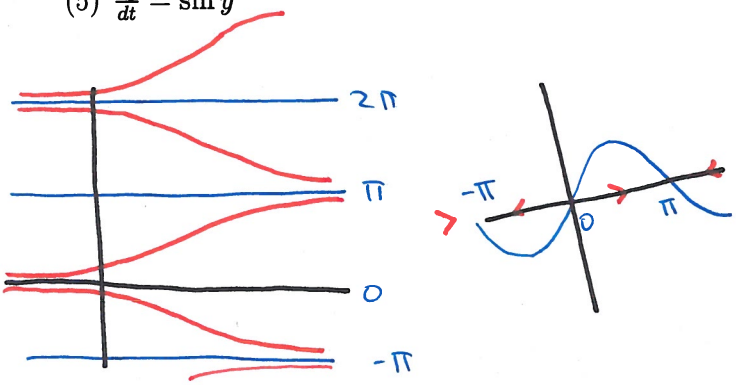
(4) $\frac{dy}{dt} = y(y-2)^2(y+1)$



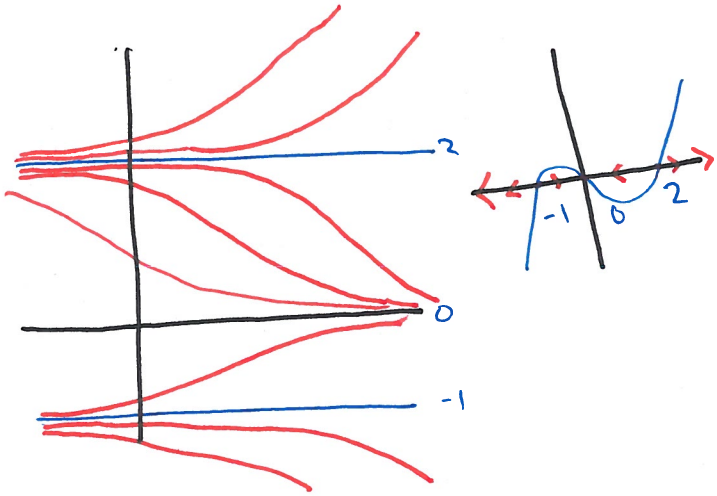
(2) $\frac{dy}{dt} = (y-2)^2$



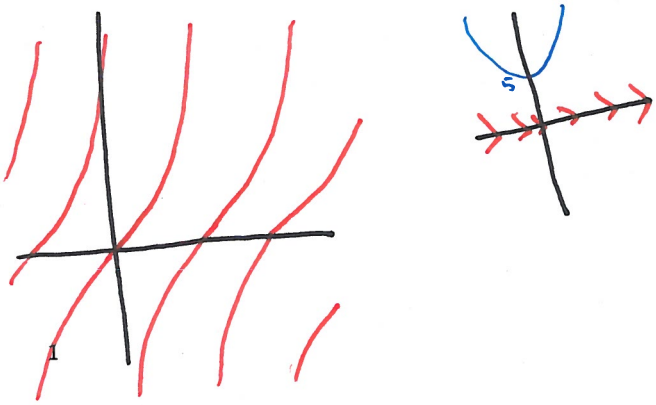
(5) $\frac{dy}{dt} = \sin y$



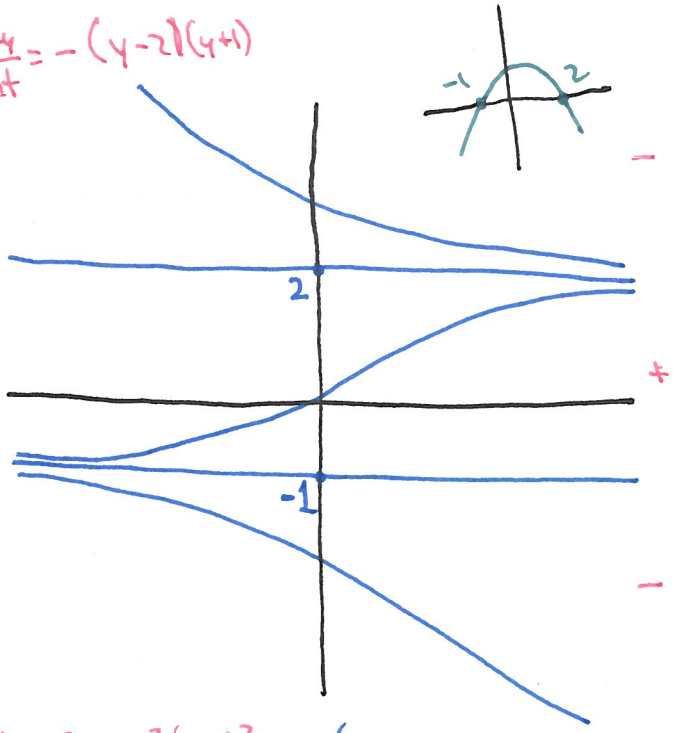
(3) $\frac{dy}{dt} = y(y-2)(y+1)$



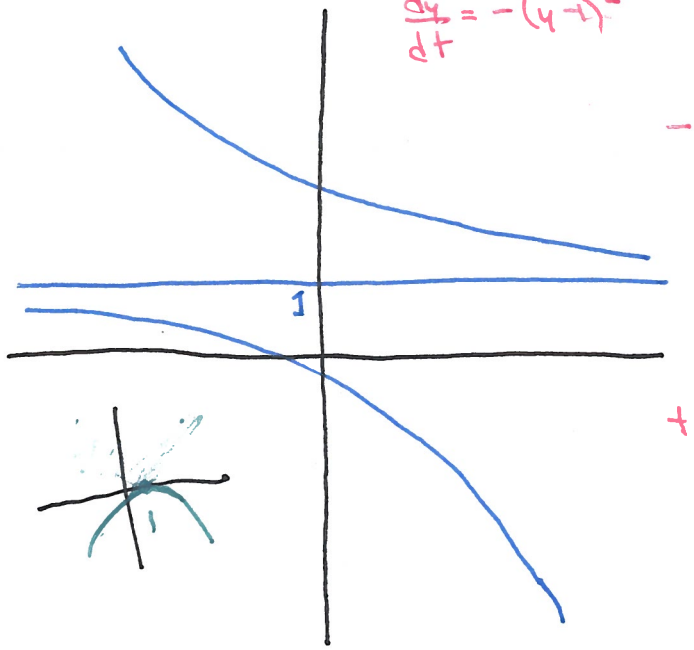
(6) $\frac{dy}{dt} = y^2 + 5$



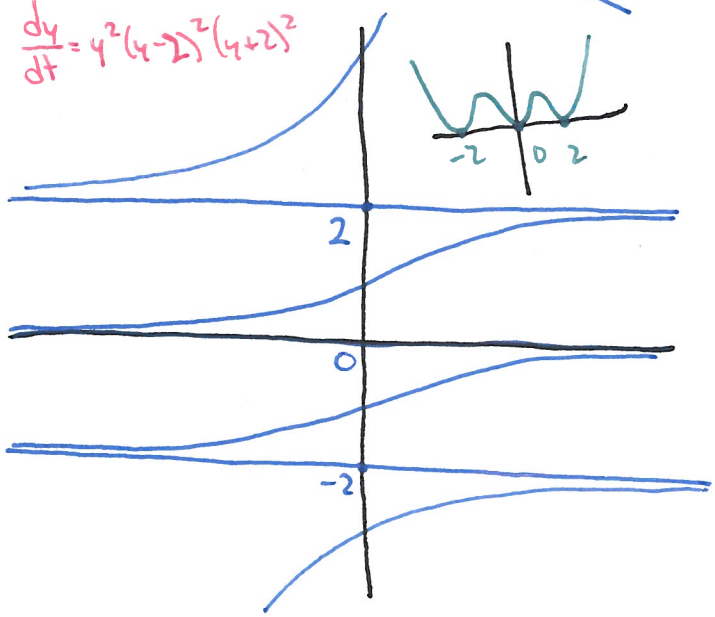
$\frac{dy}{dt} = -(y-2)(y+1)$



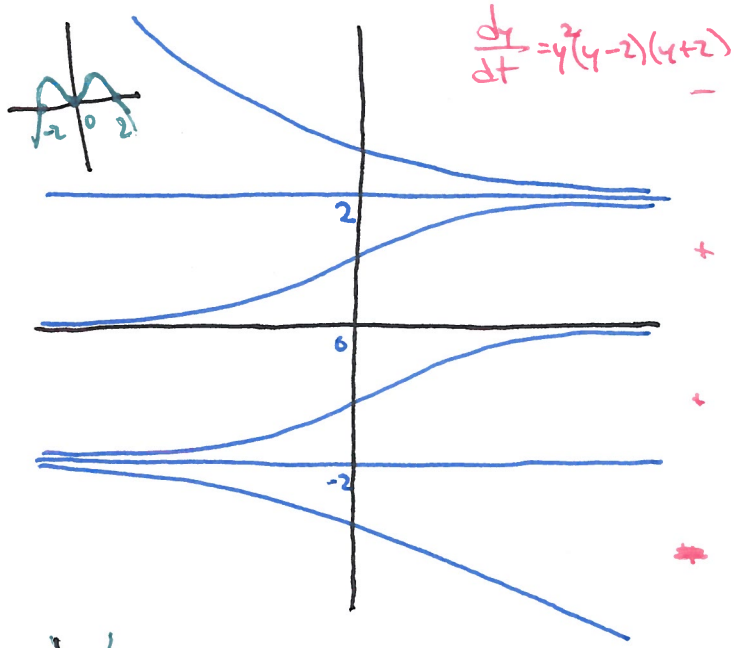
$\frac{dy}{dt} = -(y-1)^2$



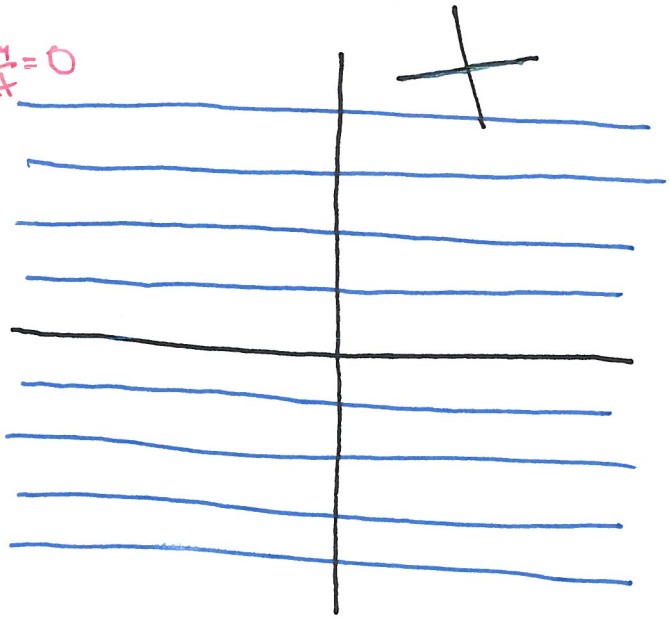
$\frac{dy}{dt} = y^2(y-2)^2(y+2)^2$

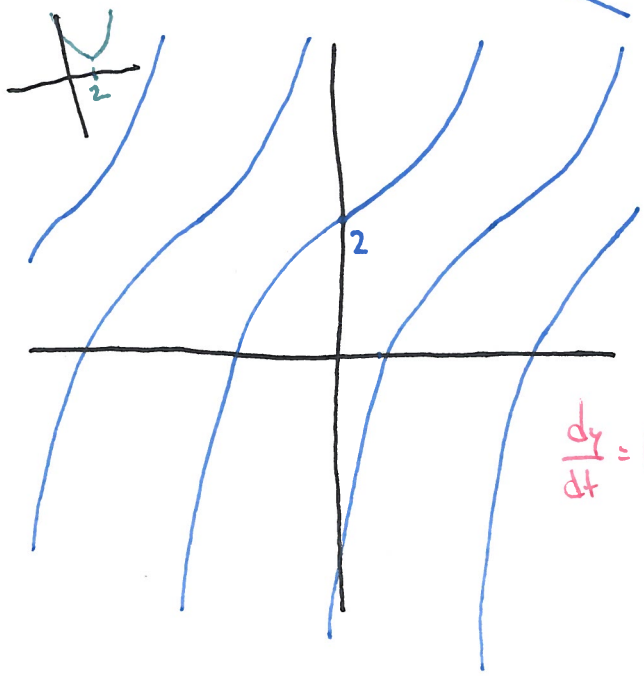


$\frac{dy}{dt} = y^2(y-2)(y+2)$



$\frac{dy}{dt} = 0$





$\frac{dy}{dt} = (y-2)^2 + 1$