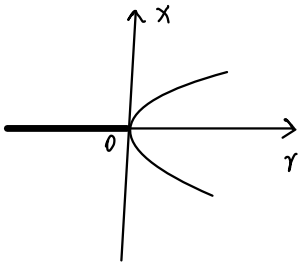3.4.1 $\ddot{x} = rx - 4x^3$

Let $rx - 4x^3 = 0$.

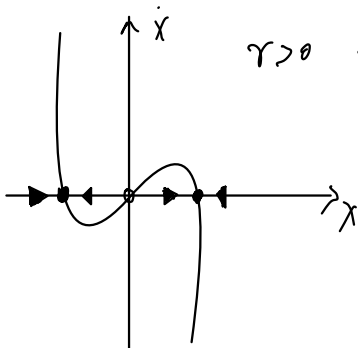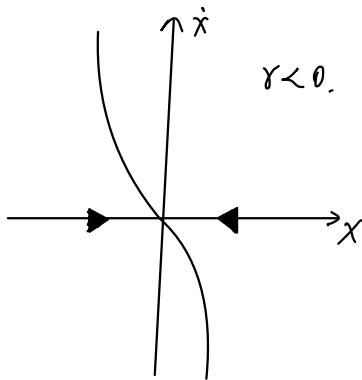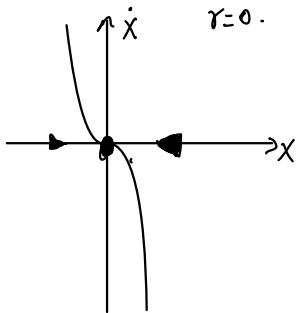$x(r - 4x^2) = 0$.

$x = \pm\sqrt{\frac{r}{4}}$ or $x = 0$.

① $x = \pm\sqrt{\frac{r}{4}}$ $r \in (0, +\infty]$

② $x = 0$ $r \in [0, -\infty]$

$r = 0$.

$r < 0$.

$r > 0$ when r=0 supercritical pitchfork bifurcation

so r>0 exchenge stabilie