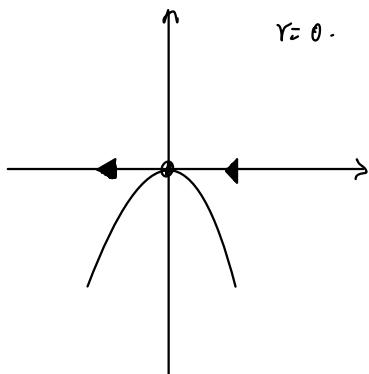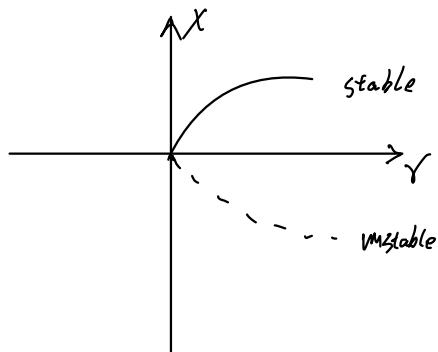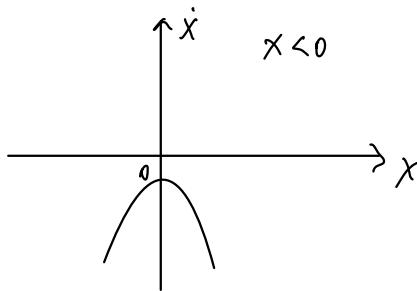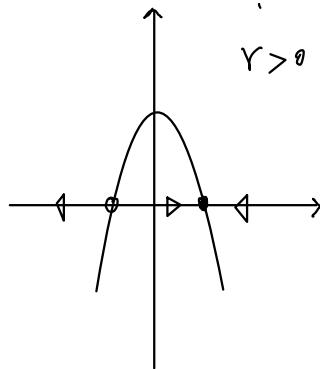3.4.5. $\dot{x} = r - 3x^2$.

this curve is saddle-node

$r = 0$.



$r - 3x^2 = 0$.

$\text{or } x = \sqrt{\frac{r}{3}} \text{ or } x = -\sqrt{\frac{r}{3}}$

$r > 0$



$x < 0$





stable

unstable

when $r = 0$ exchange stability