3.4.6. $\dot{x} = rx - \frac{x}{1+x}$

this curve is supercritical pitchfork.

Let $rx - \frac{x}{1+x} = 0$.

$x(r - \frac{1}{1+x}) = 0$.

$r - \frac{1}{1+x} = 0$.

$\frac{1}{1+x} = r$.

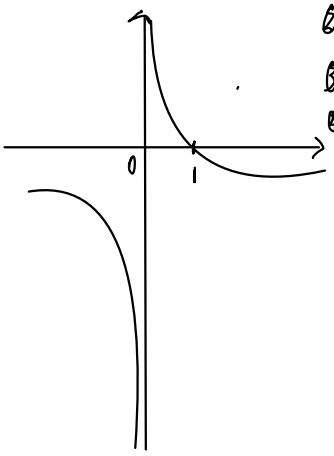
$x = \frac{1}{r} - 1$

① $r = 1$

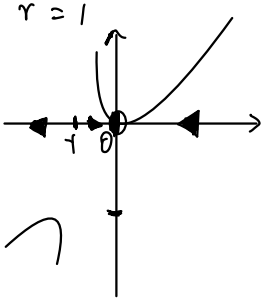
② $0 < r < 1$

③ $r < 0$

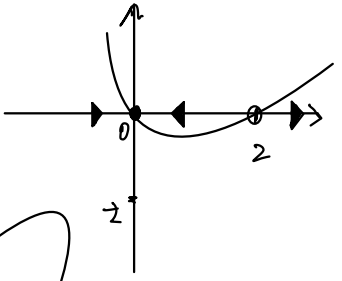
④ $r > 1$



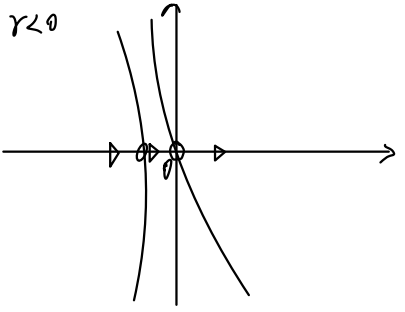
① $r = 1$



② $0 < r < 1$



③ $r < 0$



④ $r > 1$