

Name : SOLUTIONS

1. Find the equilibrium points of the given ODE and classify them as asymptotically stable, semi-stable or unstable. Draw the phase line diagram.

$$y' = y^2 - y^4$$

$$y^2 - y^4 = 0$$

$$y^2(1 - y^2) = 0$$

$$y^2(1 - y)(1 + y) = 0$$

Fixed points: $y = 0, y = 1, y = -1$

