Class Test 2

AMT | CH61015

2. Analyse the stability of the following system of equations:

$$\frac{dx}{dt} = x - y - x^3 - xy^2$$

$$\frac{dy}{dt} = x + y - x^2y - y^3$$

3. Analyse the stability of the following system of equations and sketch the trajectory of the system in phase plane for small perturbation ($\sin y = y$):

$$\frac{dx}{dt} = y$$

$$\frac{dy}{dt} = -k \sin x$$