MATH 3250, SECTION 301
QUIZ 10
05/01/2017

Name:

1.

$$\frac{dx}{dt} = x(1 - x - y)$$
$$\frac{dy}{dt} = y(2 - x - 4y)$$

(i) Find all equilibrium points.

(ii) Write the linear approximation system in matrix notation for the equilibrium point which lies strictly in the first quadrant i.e. $x > 0, y > 0$.

(iii) Classify this equilibrium point. [In case you get borderline type for $(0, 0)$ of the corresponding linear system, specify the possible classifications using Theorem 10.2.4.]

[2+2+2]