

## Homework Assignment

Use **Matlab ode solver** to solve this problem

Consider a prey-predator system

$$\begin{aligned}x' &= x - xy \\y' &= -y + xy\end{aligned}$$

Where  $x$  is the prey and  $y$  is the predator, with initial conditions of  $(x(0), y(0)) = (1, 0.45)$ . Solve this non-linear system, for  $t \in (0, 30)$  then plot the solutions in 2 figures. One is for  $x(t)$  versus  $t$  and  $y(t)$  versus  $t$ , and the other is for  $y(t)$  versus  $x(t)$ . Remember to indicate which one is prey and predator in each figure.