MATH 371-03 (181)
MATLAB # 3
Due Nov. 8, 2018

Write a MATLAB code to apply the Euler's method to solve the following IVP:

$$\frac{dy}{dt} = y(3 - ty); \;\; 0 \leq t \leq 2, \;\; y(0) = 1$$

Note that this problem has exact solution:

$$y(t) = \frac{9}{3t - 1 + 10e^{-3t}}.$$

Try to run your code with different values for N.
Plot your solution as well as the exact function. You need to save all the iterates generated bu Euler's method (w). You may also need to use the following commands:

$t = linspace(0, 2, N);$

$yExact = 9/(3t - 1 + 10e^{-3t});$

$plot(t, w, t, yExact, '--')$