

Dept. of and Electrical Engineering & Computer Science  
ENG2200 – Electric Circuits

HW 1

Due Sept 25, 2013

1. An approximation to factorial is Stirling formula

$$n! \approx \sqrt{2\pi n} \left(\frac{n}{e}\right)^n$$

Write a MATLAB script to calculate the factorial for any n  
Compare between the approximated value and the actual values for n from 1 to 20 and plot the relative error

2. Write a MATLAB script to solve this set of equations and show the solution

$$3x + 4y + z = 10$$

$$4x + 5y + 8z - 2w = -4$$

$$x + 9y + 8w = 59$$

$$9x + 3y - w = 10$$

3. Write a MATLAB script to display the following 2 functions

$$v(t) = 5\sin(\theta) \quad 0 \leq \theta \leq 2\pi$$

$$v(t) = 5\sin(\theta + \pi/4) \quad 0 \leq \theta \leq 2\pi$$

Then plot the function  $p(t) = i(t) v(t)$

From the text book

4. 1.13
5. 1.18
6. 1.26
7. 2.6
8. 2.19
9. 2.25