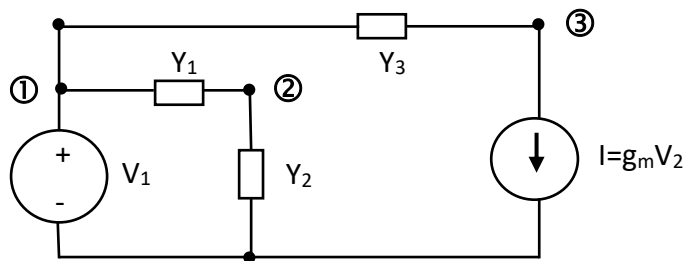


Homework due June 7th, 2018

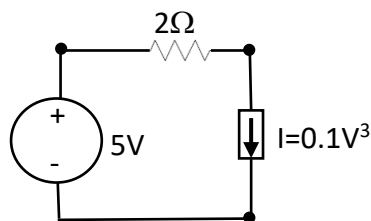
1. Solve by LU Decomposition: (Hint: use the Algorithm on page 23 in the Class Note of "Circuit Analysis+Simulation", then show your solution finding by following pages 24-26):

$$\begin{bmatrix} 5 & 2 & 0 \\ 0 & 3 & 2 \\ 20 & 17 & 0 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} 14 \\ 1 \\ 29 \end{bmatrix}$$

2. Solve for the V_3/V_1 using direct graph and tree enumeration method and show your steps (Hint: refer to pp. 27-35 of the same Class Note).



3. If an estimate of V is 2 volt, what is the next N-R (Newton-Raphson) estimate? Show your steps (Hint: refer to pp. 36-48 of the same Class Note).



4. Given $U_{1,m}=1$, $U_{2,m}=0.5$, $In=X_{m+1}=3$, $T=1$, use Backward Euler (p. 40) integration in the LMS (Linear-Multi-Step) algorithm (p. 49) to find the value of $U_{2,m+1}$ and show your steps (Hint: refer to pp. 46-49 of the same Class Note).

