# Circuit Analysis Techniques

# Lecture 15
# Tutorial

Lecture delivered by:

# Objectives

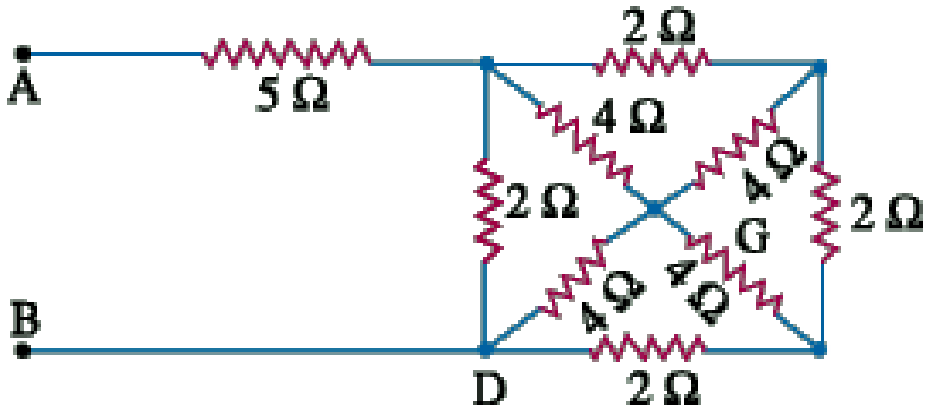
At the end of this lecture, student will be able to:

- Solve problems on Star-delta conversion
- Solve problems on Superposition theorem
- Solve problems on circuit analysis

# Star/ Delta Transformation

Problem 10:

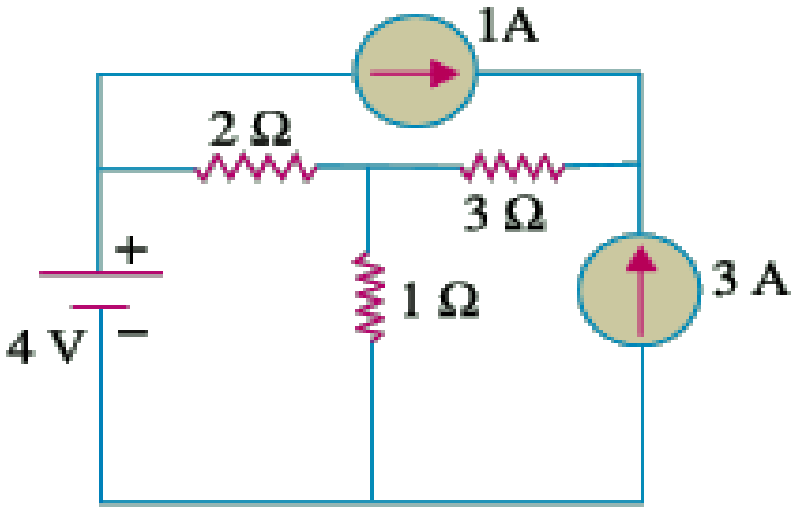
Use Δ-Y conversion to find the resistance between the terminals ‘AB’ of the circuit shown in figure.



# Problems

Problem 11:

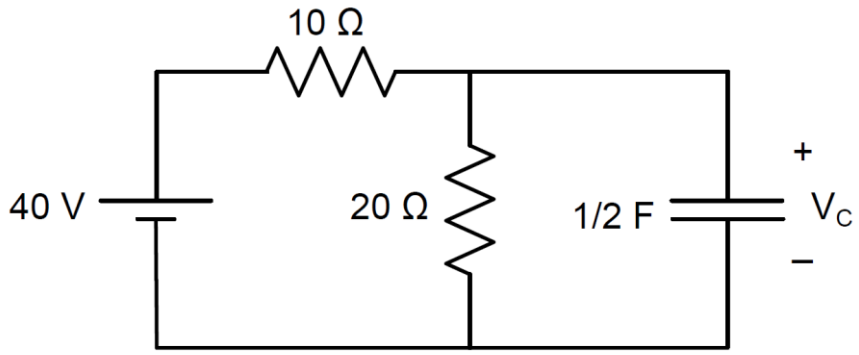
In the circuit of Fig. find current through 1-Ω resistor using both THEVENIN's theorem and SUPERPOSITION theorem



# Problems

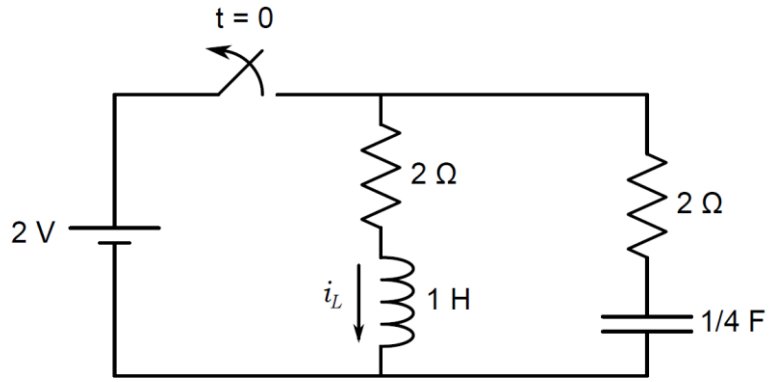
## Problem 12

In the circuit in Fig, VC = 20 V at some time $t_1$. Then $\frac{dVc}{dt}$ at the same time is




## Problem 13

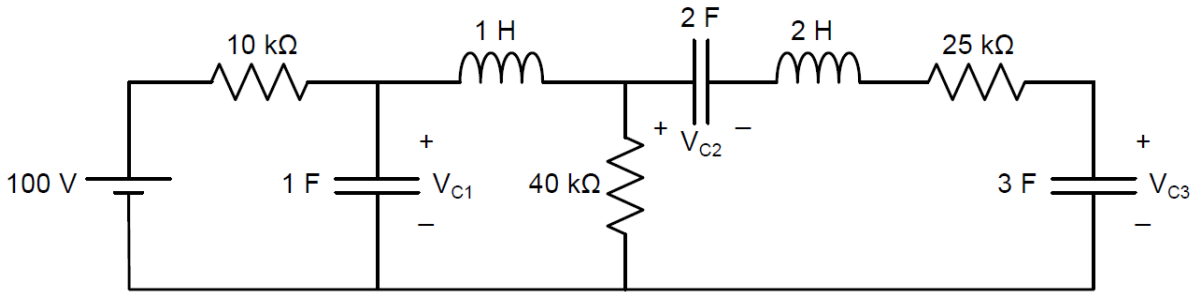
In Fig.5 the switch was initially in closed position for a long time and is opened at time t = 0. Then the expression for current through the inductor iL is given by



# Problems

## Problem 14

In Fig find capacitor voltages $V_{C1}$, $V_{C2}$ and $V_{C3}$ under steady state are respectively




Demonstration Using MATLAB

# Summary

- Understand and be able to use Star-delta conversion
- Understand and be able to use Superposition theorem
- Understand and be able to use Circuit analysis Techniques