Circuits and Systems - 1 - Week 9

Chapter 4

P4.2.3 on Page 150

Compute v_1 and v_2 using nodal analysis technique. Assume all currents are entering node 2.

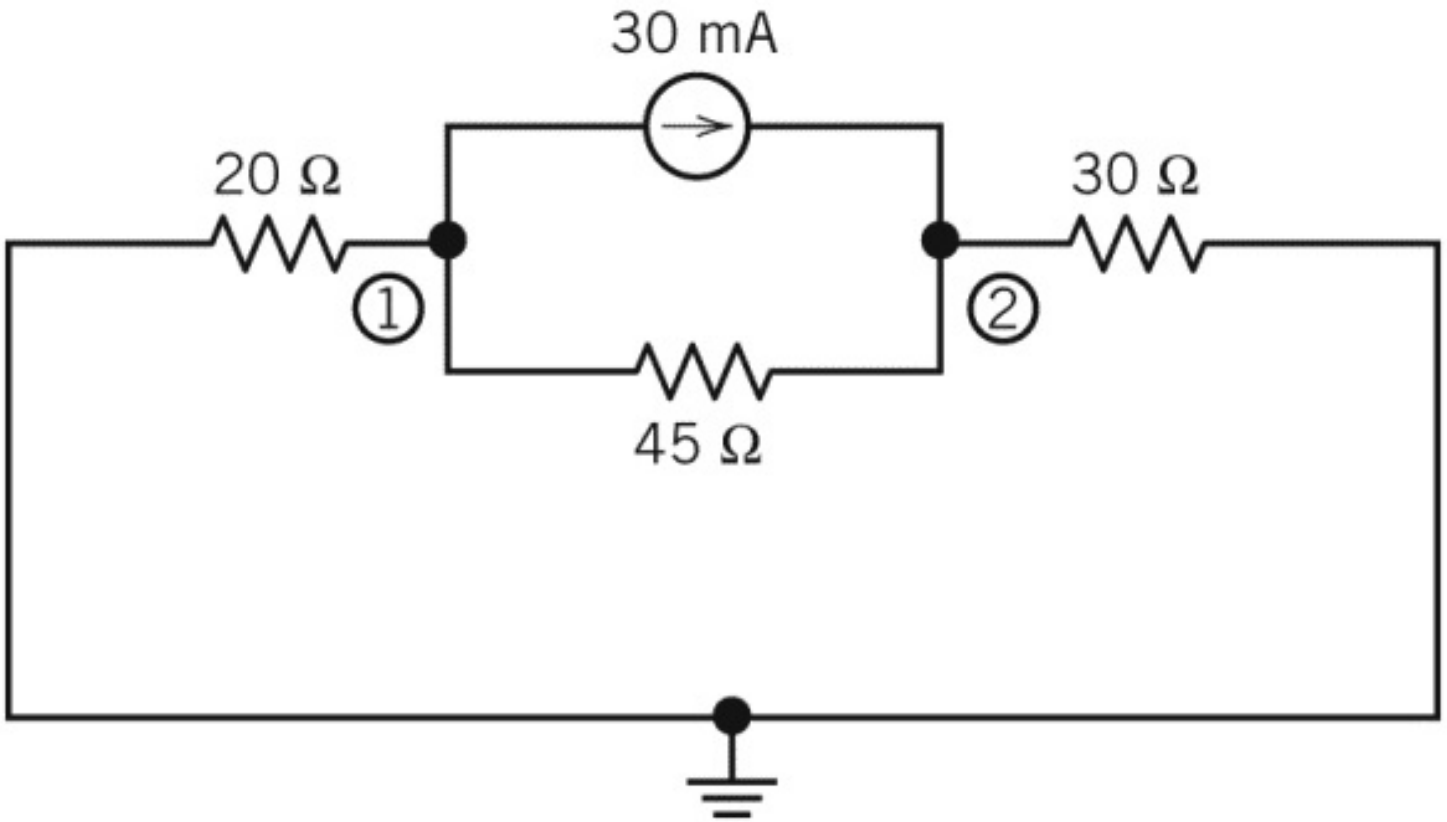

Figure: P4.2.3 on page 150

Chapter 4

P4.2.3 on Page 150

KCL at node 1: KCL at node 2:

Chapter 4

P4.3.1 on Page 151

Compute v_c

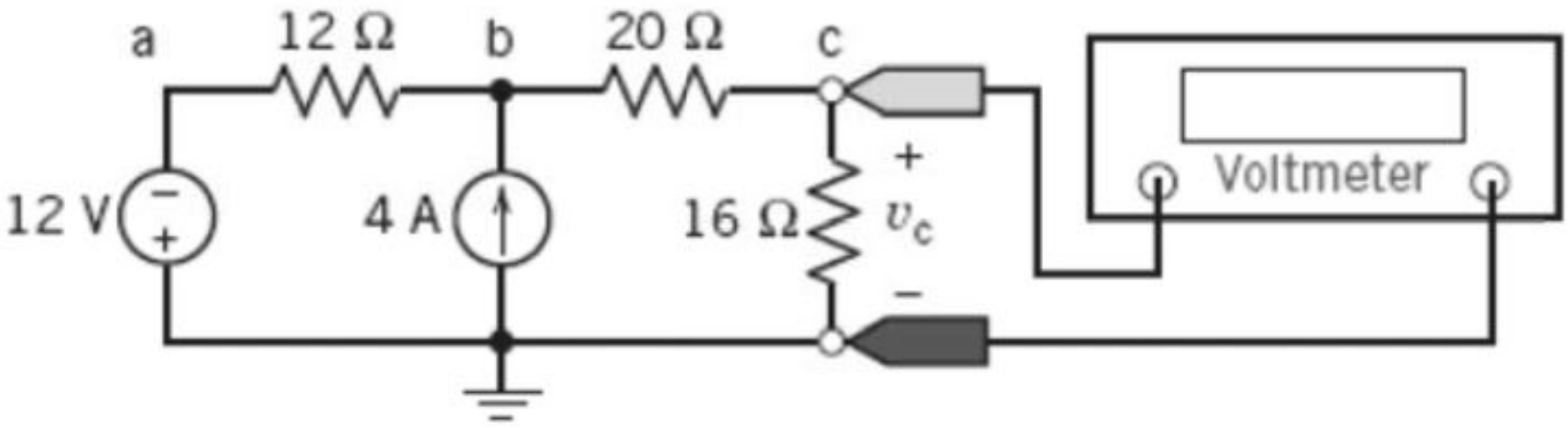

Figure: P4.3.1 on page 151

Chapter 4

P4.3.1 on Page 151

Applying KCL at node b and c, we obtain the following:

Chapter 4

P4.3.6 on Page 151

Determine v_1 and v_2

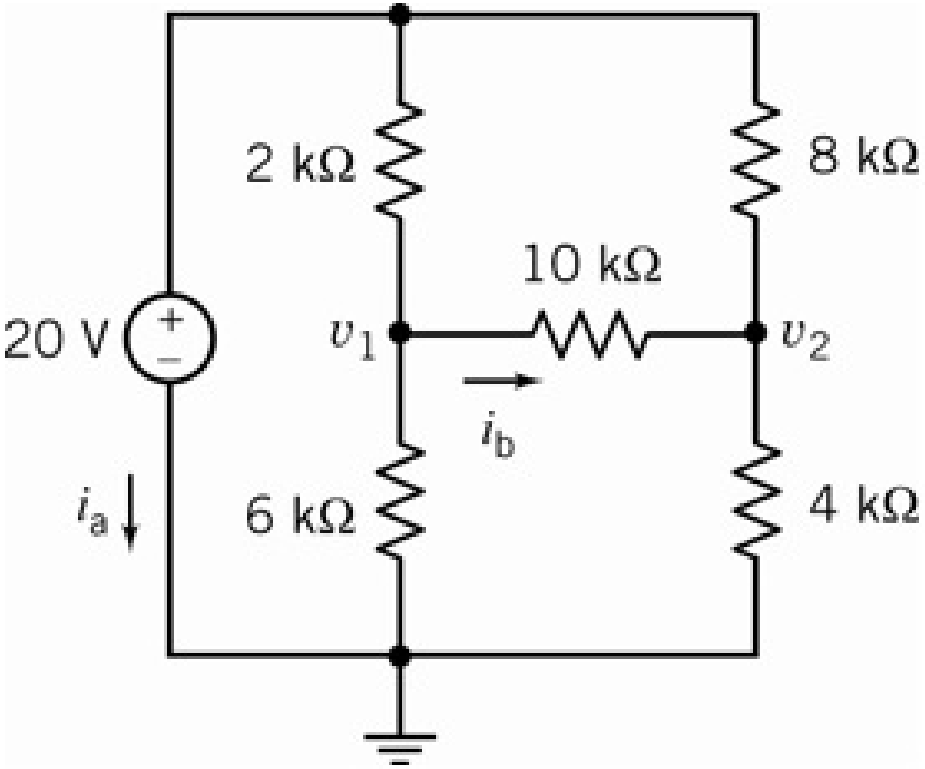

Figure: P4.3.6 on page 151

Chapter 4

P4.3.6 on Page 151

Applying KCL at nodes 1 and 2, we obtain the following:

Chapter 4

P4.3.10 on Page 152

Determine i_1, i_2 and i_3 using Mesh Analysis Technique

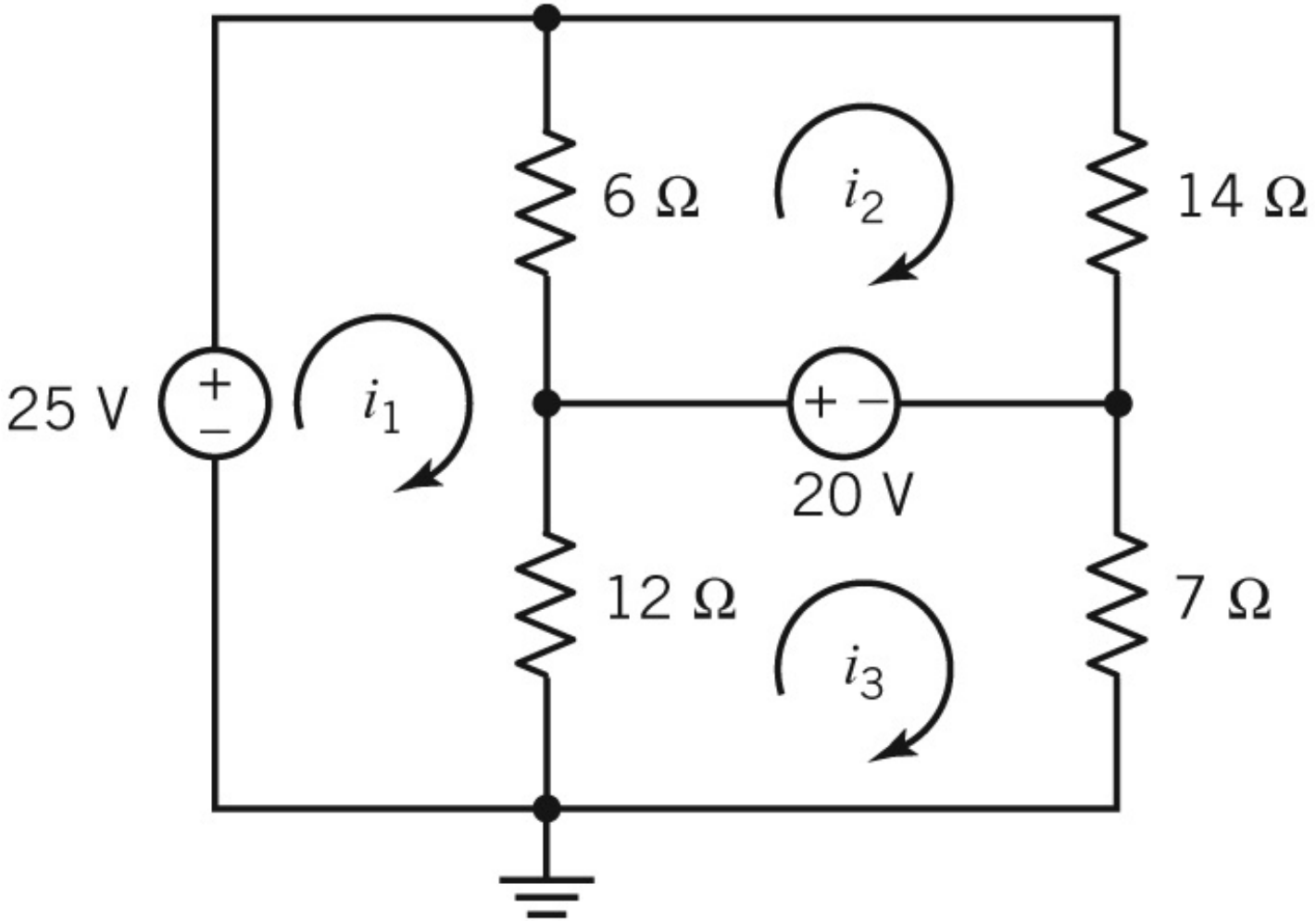

Figure: P4.3.10 on page 152

Chapter 4

P4.3.10 on Page 152

Apply KVL to loops, we obtain the following:

Next week topics

We will begin with Chapter 5 and cover the following topics:

- Source Transformations
- Norton Equivalent Circuit Representation
- Thevenin Theorem
- Maximum Power Transfer Theorem