Circuit analysis Superposition Node/mesh specify Thevenin (any method) Thevenin/Dependent Source (VTest and any analysis) Bridge (short answer) Amplifier (short answer section)

Circuit Analysis I (Superposition)



1) Use superpostion to find the voltage across R5.

V1 circuit: Draw

I1 circuit: Draw

I2 circuit: Draw

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## Node vs. Mesh Analysis



How many nodes are present? How many loops are present? How many nodes are constraned by voltage sources? How many nodes does that leave? How many loops are constrained by current sources? How many unknown current loops does that leave?

What are the equations for node analysis?

What are the equatiosn for mesh analysis?

Find V<sub>R1</sub>

c)



Which method is easier to use in this circuit?

Why?

Find V<sub>R2</sub> (Answer 3.5V)

d)



How many nodes are in this circuit?

How many unknown nodes are there?

How many mesh loops are in this circuit?

Is there a supermesh?

Find V<sub>R2</sub>

e) Thevenin Equaivalent Circuit



## 1) Using any method, find the equivalent circuit



## Thevenin Equivalent - Dependent sources





1) Find VThevenin using the Open Circuit method

2) Find INorton using the short circuit method

3) Find RThevein using the test voltage/current method