**SUPERPOSITION THEOREM**

This principle states that the voltage across (or current through) an element in a linear ciruit is the alg

In this process, you want to calculate the voltages and the currents in each circuit by taking into account just one power source alone (either a voltage source or current source) and then remove all the other sources.

For example if you have a current source and a voltage source, you’ll first of all solve it with the voltage source and then send it with the current source.

After solving it both ways, we will find the algebraic sum of the voltages and currents.

When removing a current source, we replace with an open circuit.

When removing a voltage source, we replace with a short circuit.

Let’s say we want to solve with respect to the voltage source first,

We change the current source to an open circuit.

Next, find the equivalent resistance.

Then find the current coming from the battery

Next find the current through each resistor

Also, find the potentials at the given points.

Next we solve with respect to the current source.

We find the currents and voltages as well

Next we add the potentials gotten from the.

Superposition theorem requires as many circuits to be solved as there are independent sources.

Non-linear networks do not satisfy superposition and homogeneity conditions.

SOURCE TRANSFORMATION

If you have a resistor and a current source in parallel, it can be converted to a voltage source by multipling the two values v = iR and then the voltage source will be in series with that resistor.