Electric Circuit Study Applets

Overview

The Electric Circuit Study Applets ("the Applets") provide practice problems similar to the examples, exercises and end-of-chapter problems in the text except, they are highly interactive! Values are chosen randomly, so the Applets offer an endless supply of practice problems.

How It Works

In each problem, the Applet asks a question, then accepts and checks your answer, providing you with immediate feedback. Correct methods are reinforced and misconceptions are corrected quickly.

Worked Examples

A button on each Applet can be found called Worked Examples. It is an important part of the Applet functionality and integral to mastering the material. They provide detailed solutions to typical problems like the Applet you are working on. The Worked Examples include:

- An introduction to the type of problem presented with basic concepts
- A detailed solution to multiple examples of that problem type

The Worked Examples are reached via the website, from within individual Applets or separately in an area of the Student Companion Website entitled "Worked Examples from the Electric Circuit Study Applets." Together, Electric Circuit Study Applets and the Worked Examples are an effective guide to learning about electric circuits.

Using the Book and the Applets

The Applets are closely integrated with this textbook. Many of the example problems from this textbook are included in the Applets, although the random number generator will have changed the values of resistances, capacitances and other circuit parameters. The solutions provided in the Worked Examples use the techniques described in the textbook. Textbook examples that are included in the Applets are marked with the invitation:

When you review the Applets associated with this chapter and section, you will find your textbook problem, enhanced with the immediate feedback as described above. The Worked Examples associated with this problem provide additional examples, supplementing content presented in this textbook.

Electric Circuit Study Applets

Home   Overview   Site Reqs

Ohm's and Kirchhoff's Laws (Chapter 3)

- Kirchhoff's Laws,
- Simple Circuits,
- Circuits with Dependent Sources,

Equivalent Circuits (Chapter 3)
- Voltage and Current Division,
- Equivalent Resistors,
- Equivalent Circuits,
- More Voltage and Current Division,

Mesh and Node Equations (Chapter 4)
- Simple resistive circuits,
- More resistive circuits,
- Circuits containing dependent sources,
- More circuits containing dependent sources,

Circuit Theorems (Chapter 5)
- Source Transformations,
- Superposition,
- Thevenin Equivalent Circuits,

Op Amp Circuits (Chapter 6)
- Inverting and noninverting amplifiers,
- Node Equations for op amp circuits,

Capacitors and Inductors (Chapter 7)
- Capacitors and Inductors,

First Order Circuits (Chapter 8)
- Simple First Order Circuits, and
- More First Order Circuits
- Switched First Order Circuits

AC Circuits (Chapter 10)
- Complex Arithmetic,
- Simple AC Circuits,
- More AC Circuits

AC Power (Chapter 11)
- Power in AC Circuits

Magnetically Coupled Circuits (Chapter 11):
- AC Circuits with Mutual Inductance
- AC Circuits with Transformers

Frequency Response (Chapter 13)

- Simple Circuits,
- Circuits with Dependent Sources,

Laplace Transforms (Chapter 14)

- Simple Circuits with Switches