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| **Title** | 5th homework in the Electric Circuit Theory class by 201923250 |

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**Summarization of the chapters from 9.1 to 9.4**

For clear purposes, for pedagogical reasons and also for historical reasons, we have limited the forcing feature to dc sources. Historically, dc sources were the main means of providing electric power up until the late 1800s. The fight between direct current and alternating current started at the end of the century. Electrical engineering both had their supporters at the period. As ac is more reliable and cost-effective for long distances transmission, ac systems eventually emerged. Therefore, we found dc references first in line with the chronological chain of events.

A sinusoid is a signal that is sinoid-like or cosine-like. For a variety of factors, we are interested in sinusoids. First of all, nature itself is usually sinusoidal. We have sinusoidal shifts in pendulum movement, string movements, waves on the ocean floor and, to name only a few, the normal reaction of the underdamping mechanisms. The sinusoid is an essential circuit analysis feature, for these and other purposes. We are beginning with a foundational debate on sinusoids and phasors. The impedance and acceptance principles are then described. Kirchhoff's and Ohm 's basic circuit laws, introduced for dc circuits, are applicable to ac circuits.

Though Hertz lived only at the age of 37, his observation of electromagnetic waves has opened the way to use those waves in radio , TV and other Communications networks in operation. His name holds the frequency unit, the hertz. A phasor is a complicated number representing a sinusoidal amplitude and point. Now that we know how to reflect the phasor or frequency superiority voltage or current.

**Example Problem solutions with explanation**



