



# Electric Circuits

## Lecture 10 Sinusoidal Steady State

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# Lecture Outline

- Review
- Chapter 13 in the textbook



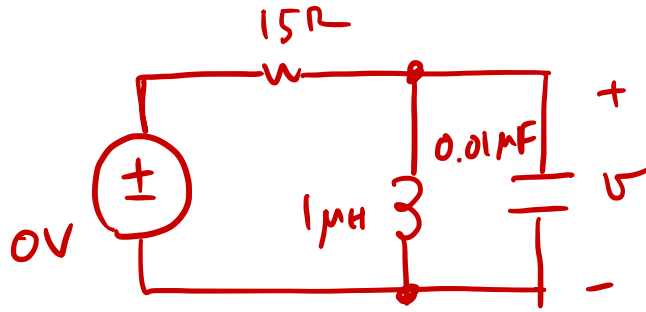
# Review





# Review

Practice



$$R = 15\Omega$$

$$L = 1\mu\text{H}$$

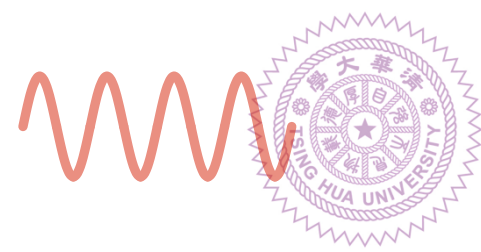
$$C = 0.01\mu\text{F}$$

Find and plot  $V(t)$ . Given  $V(0)$  and  $\frac{dV(0)}{dt}$ .



# Chapter 13

# The Sinusoidal Source



- We would like to look at response of networks to sinusoidal drive.
  - Sinusoidal source produces a voltage/current that varies sinusoidally with time.
  - Sinusoids are important because signals can be represented as a sum of sinusoids.
  - Response to sinusoids of various frequencies – aka **frequency response** – tells us a lot about the system.

