

**Electrical and Computer Engineering  
University of Massachusetts Amherst  
ECE 580**

**Homework 1**

1. *Problem from Textbook: 2.1, 2.2, 2.3*

2. *Problem A*

Apply Kirchoff's laws to write the differential equations that describe the operation of the circuits below.

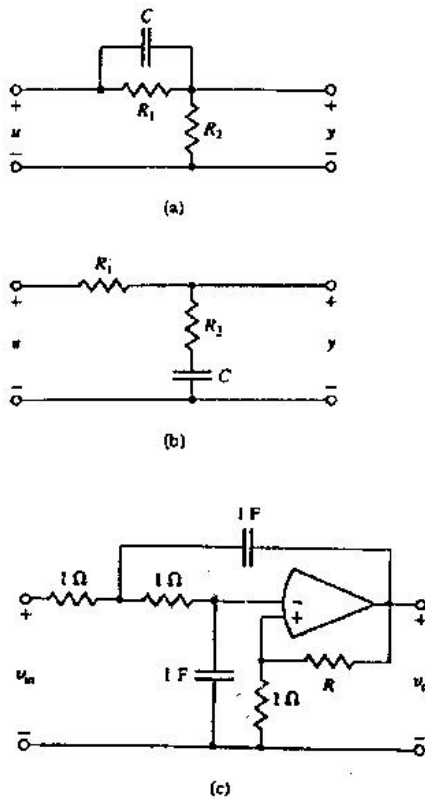


Figure 1: Some Electric Circuits

3. Problem B

Write the state-space equations for the electrical circuits below.

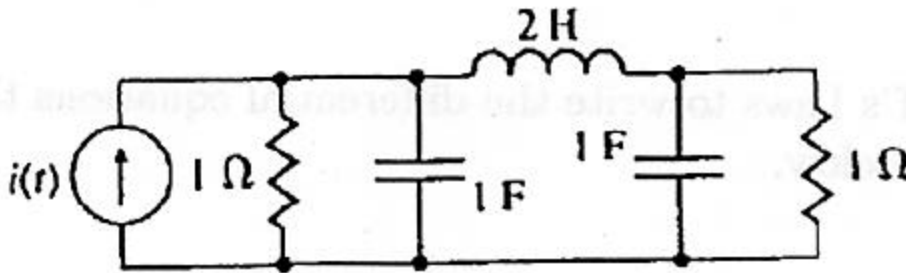
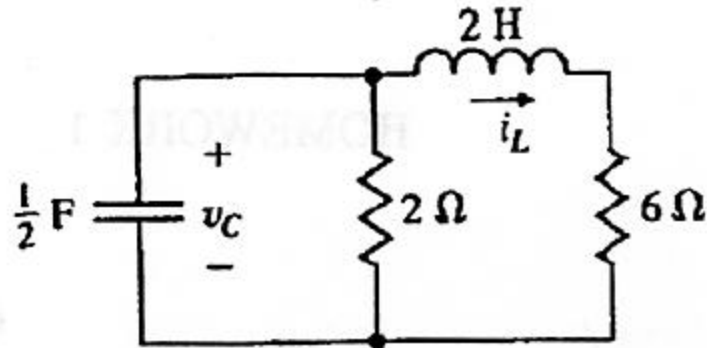


Figure 2: Some Electric Circuits