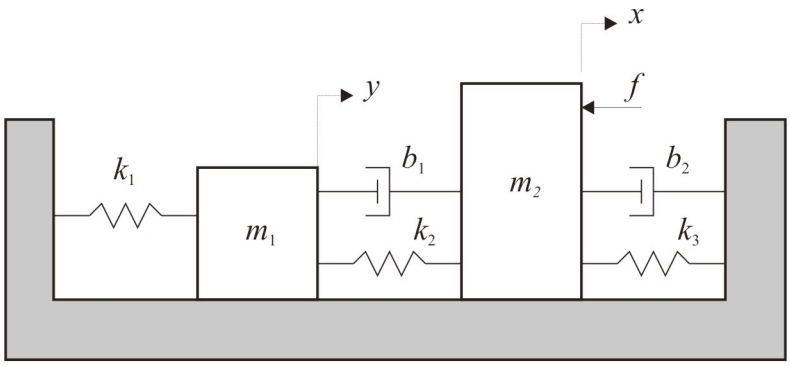
Mechanical/Electrical Analogies

1.

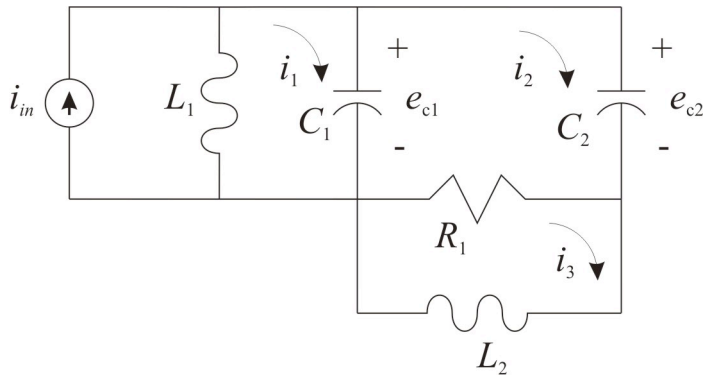


No sliding friction.

a. Find the analogous electrical system using the force-voltage analogy. Indicate the values of all components in the electrical system (resistors, capacitors, inductors, etc.). Show $\dot{x}$ and $\dot{y}$ on your electrical system. Explain the steps you use to find your electrical system.

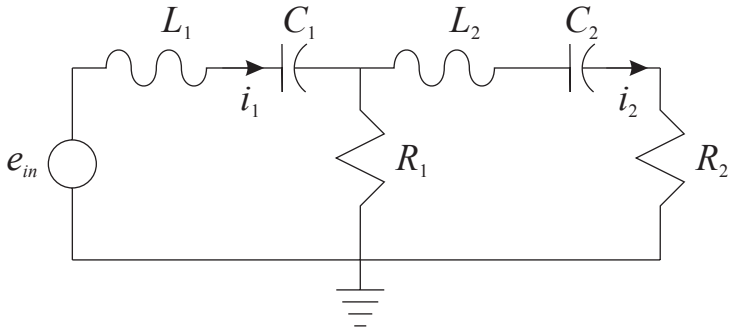
b. Find the analogous electrical system using the force-current analogy. Indicate the values of all components in the electrical system (resistors, capacitors, inductors, etc.). Show $\dot{x}$ and $\dot{y}$ on your electrical system. Explain the steps you use to find your electrical system.

2.



Find the analogous mechanical system using the **force-current** analogy. Indicate the values of all components in the mechanical system (springs, masses, dampers, etc.). Show e_{c1} and e_{c2} on your mechanical system. Explain the steps you use to find your mechanical system.

3.



Find the analogous mechanical system using the **force-voltage** analogy. Indicate the values of all components in the mechanical system (springs, masses, dampers, etc.). Show i_1 and i_2 on your mechanical system. Explain the steps you use to find your mechanical system.