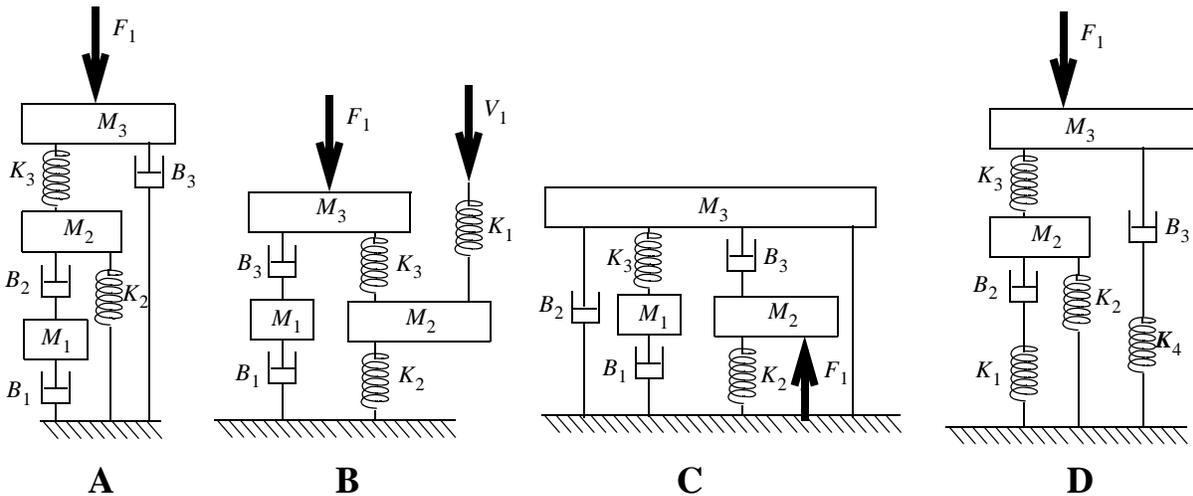
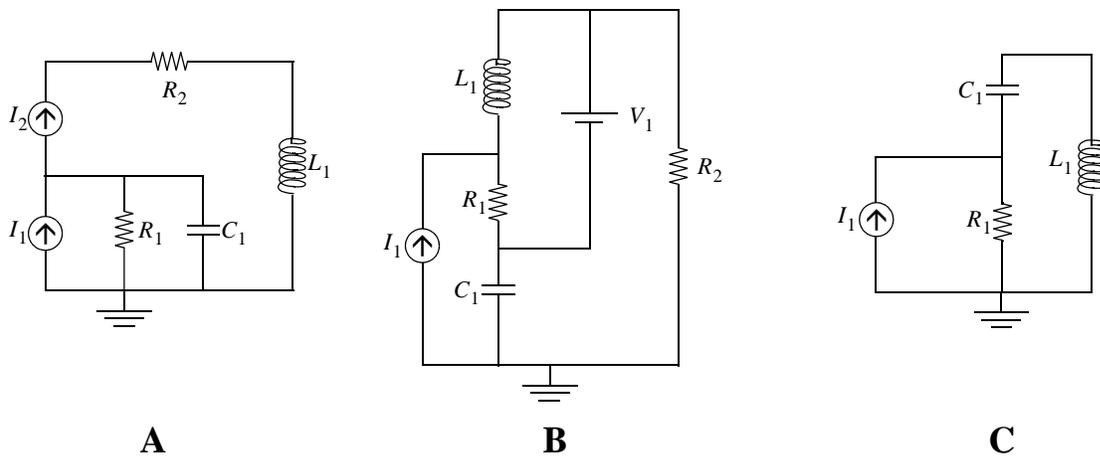


EECE 360 Homework - Electro-Mechanical Equivalents

1) Draw the equivalent electric circuit of the following mechanical systems:



2) Draw the equivalent mechanical system for the following electrical circuits:



3) A car of mass $4M_1$ has wheels of mass M_2 and a suspension with a stiffness K and damping B . The wheel is always in contact with the ground. The car is not moving and a downward force F is applied to the body of the car.

- Draw a mechanical system diagram for one wheel/suspension
- Draw the equivalent electrical circuit
- Compute the transfer function between the body height Y , and force F

4) The same car is now travelling down the road. A speed bump applies an upward force F to the wheel of the car.

- Draw a mechanical system diagram for one wheel/suspension
- Draw the equivalent electrical circuit
- Compute the transfer function between the body height Y , and force F