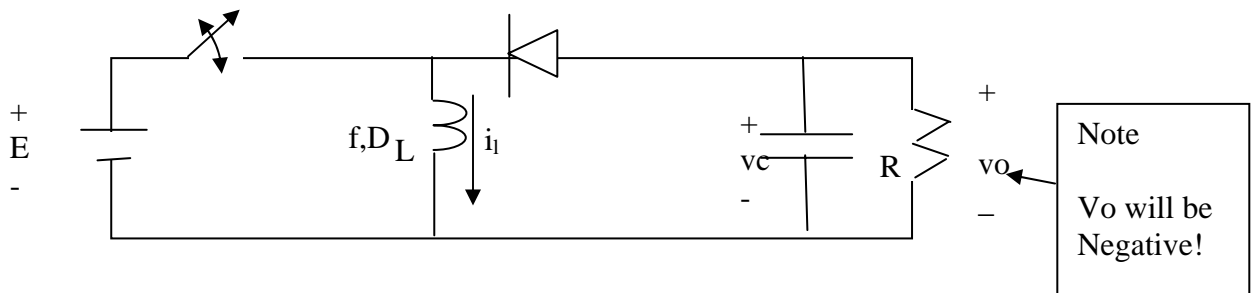
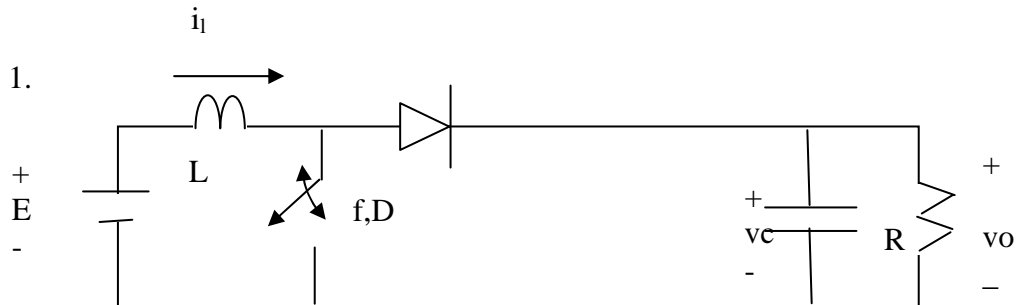


EE432/537 Power Electronics Homework #1 Circuit Analysis 1 Due Thursday 2/22

Work in groups of 2. Each group member must take the lead on analyzing one of the converters given.



For each of the converters shown assume CCM and

- Carefully draw waveforms of inductor current, output voltage, switch voltage and current, inductor voltage and capacitor current.
- Derive a formula for the ratio V_{oavg} / E
- Derive a formula for the ripple
- Assume $E = 100$, $D = 0.4$, $f = 5$ kHz, $R = 10$ ohm. Find L , and C for CCM and a output voltage ripple $< 1\%$
- Repeat for $f = 1$ kHz. Compare and comment
- Tell me what the function of each circuit is and give me a name for the circuit.