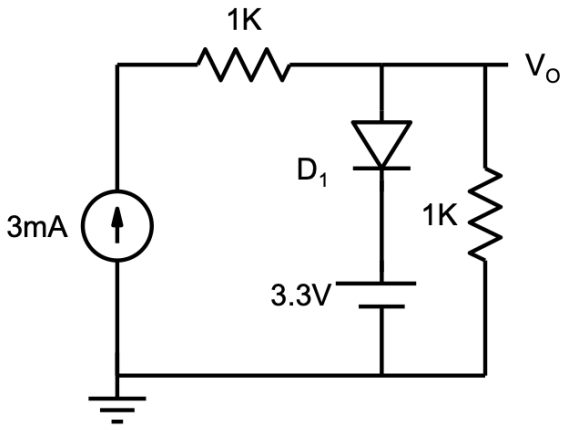
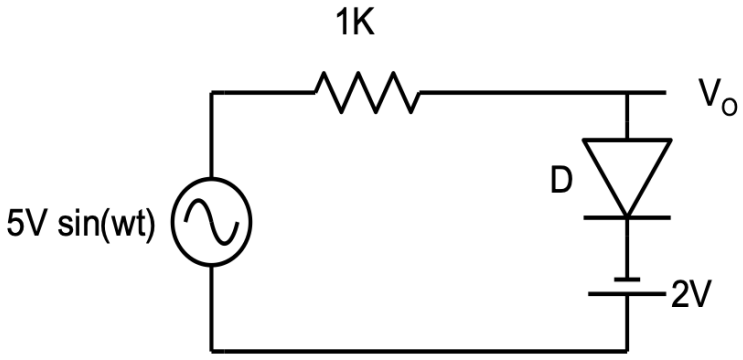
Questions

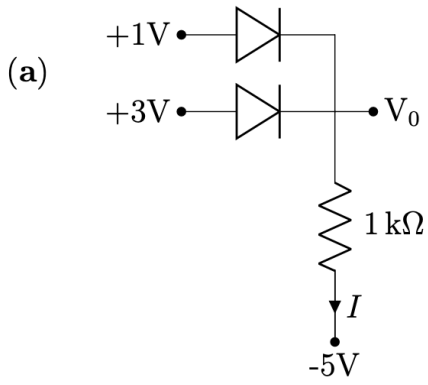
1. Determine the output voltage with reference to ground for the circuits shown below assuming that cut-in voltage of the diode is 0.7V

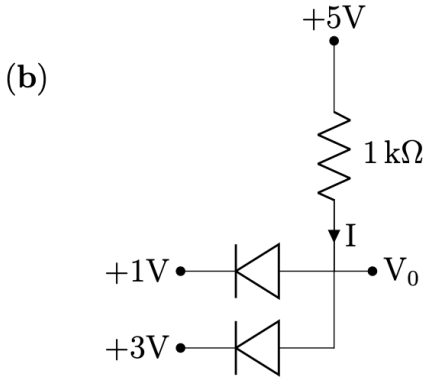


2. Sketch the output voltage vs. input voltage characteristics for the circuit shown below assuming ideal diode.

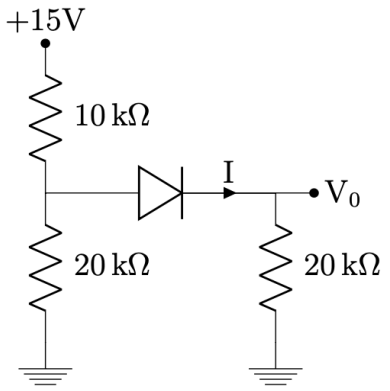


3. For circuits shown below, using ideal diodes, find the voltage (V_0) and current (I) indicated.

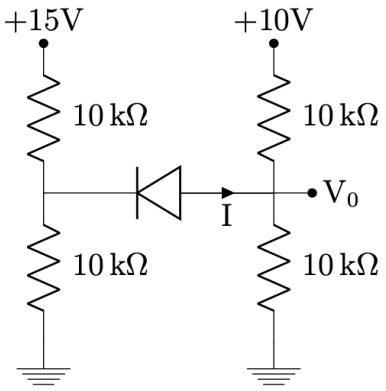




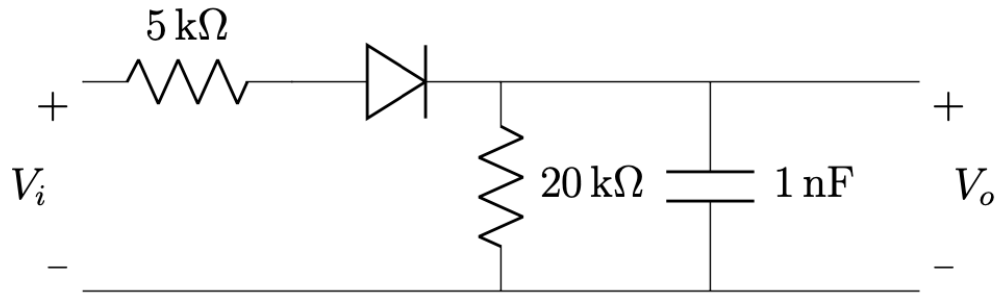
(c)



(d)



4. A rectangular pulse of 10 V amplitude and duration 4 μs is applied as V_i at the input of circuit given. Determine and sketch $V_o(t)$ for $t > 0$ assuming that the diode is ideal and the initial voltage across the capacitor is zero.



5. Design the power supply circuit shown below that will supply 10V to a load of 1000Ω with ripple voltage less than 0.2V. As part of the design, determine transformer turns ratio, value of capacitance, diode peak current and peak inverse voltage. Assume that input is 220V rms with a frequency of 50Hz. Assume constant voltage-drop model (0.7 V) for diodes.