P4.5. v_I is a 10-V peak sine wave, Diodes are ideal, I is a 100 mA current source, and B is a 3V battery. Sketch and label the waveform of the battery current i_B. What is its peak value? What is its average value? If the peak value of v_I is reduced by 10%, what do the peak and average values of i_B become?
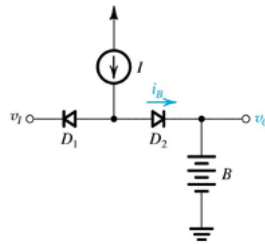

Figure P4.5

P 4.44 For the circuits in Fig. P4.8, utilize Thevenin's theorem to simplify the circuits and find the values of the labeled currents and voltages. Assume that conducting diodes can be represented by the constant-voltage drop model ($V_D = 0.7$ V).

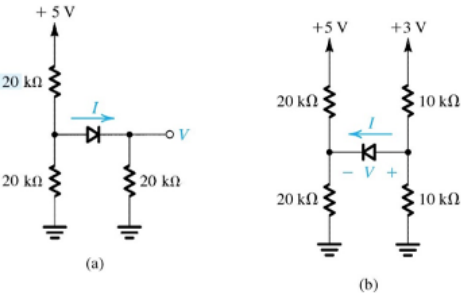Figure P4.8