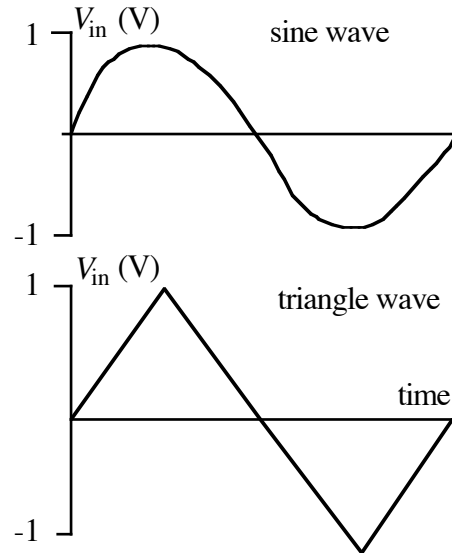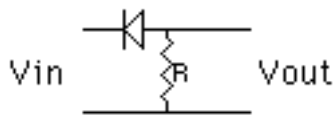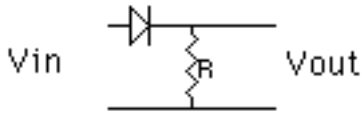# Physics 517/617 HOMEWORK IV
Due: Nov 10

1) Given the following circuits and input waveforms sketch the output waveforms (4 sketches in all). Assume the diodes are silicon.

2) Simpson, problem 27, page 198.

3) Simpson, problem 6, page 252.

4) Simpson, problem 10, page 252. In this problem assume that the emitter is grounded and the collector resistor is connected between the collector and power supply (e.g. Fig. 5.8).

5) Simpson, problem 11, page 252.

Physics 617 or optional
1) Use the B2SPICE program on the computers in Room 3005 to simulate the output of the full-wave rectifier in Fig. 4.28, page 190 of Simpson. Pick reasonable values for R and C to smooth out the 60 Hz input voltage. There is a manual describing the program in the lab. When you analyze the circuit with the program you will want to use the *transient* option.

2) Plot V_{out} vs. V_{in} for the following circuit if $V_{in} = V_0 \sin \omega t$, with $V_0 = 2$ Volts and $\omega = 360$ Hz. Assume the diode is made of silicon.