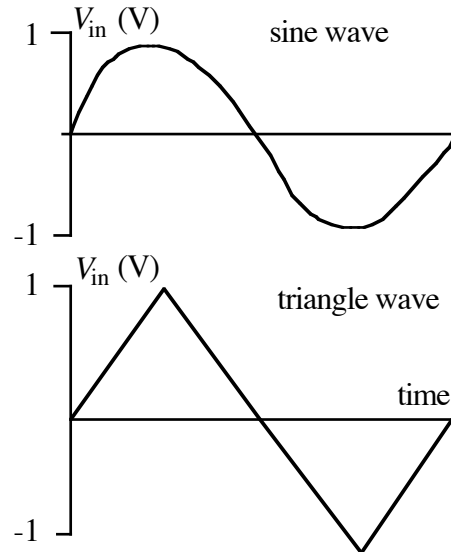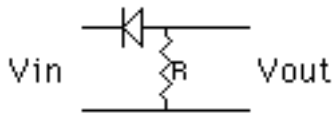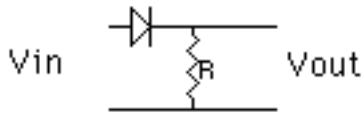1) Given the following circuits and input waveforms sketch the output waveforms (4 sketches in all). Assume the diodes are silicon.

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.

6) Use the 5SPICE program (available on the computers in the lab or download free at http://www.5spice.com/download.htm) 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. When you analyze the circuit with the program you will want to use the *transient* option.

7) 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.