Analog Electronics Homework 2

1. Analyze the full-wave rectifier circuit given in Figure 1. Sketch v_{out} and determine dc voltage available. Diodes are ideal.

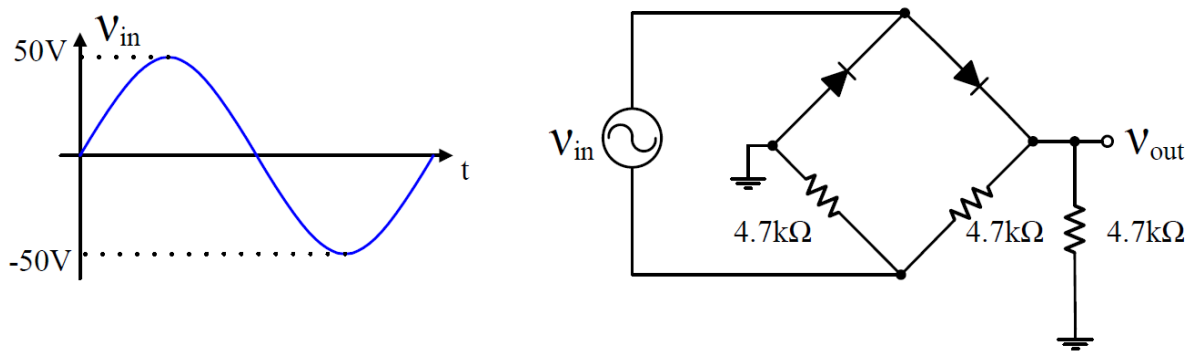

Figure 1

2. Analyze the clipper circuits given in Figure 2(a) and Figure 2(b). Sketch v_{out} for each part for the given sinusoidal input.

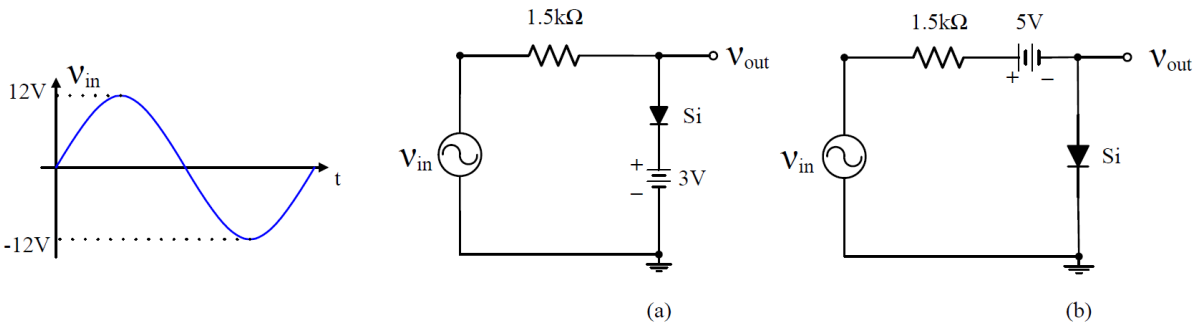

Figure 2

3. Analyze the clipper circuit given in Figure 3. Sketch *vout* for the given triangular input.

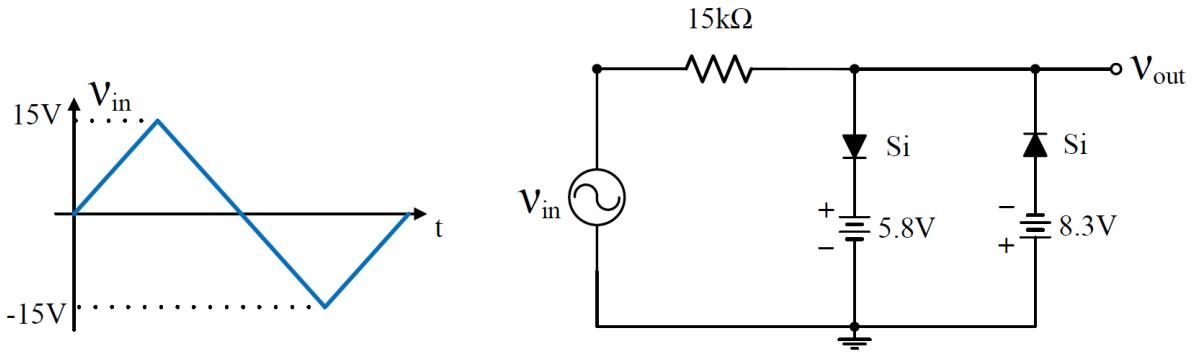

Figure 3

Analog Electronics Homework 2

4. Analyze the clamper circuits given in Figure 4(a) and Figure 4(b). Sketch v_{out} for each part for the given square input.

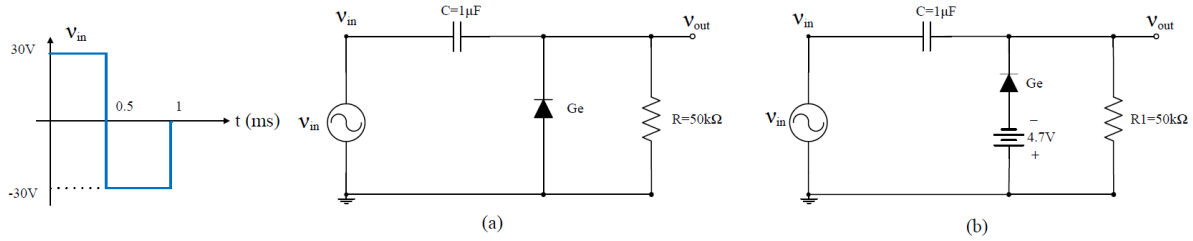

Figure 4

5. a) Analyze the Zener voltage regulator circuit given in Figure 5. Find V_L, I_L, I_Z and I_R if R_L=100Ω.
   b) Repeat part (a) if R_L=680Ω.
   c) Find R_L for the maximum power dissipation of Zener diode.
   d) What is the minimum R_L that will keep Zener diode in the "on" state.

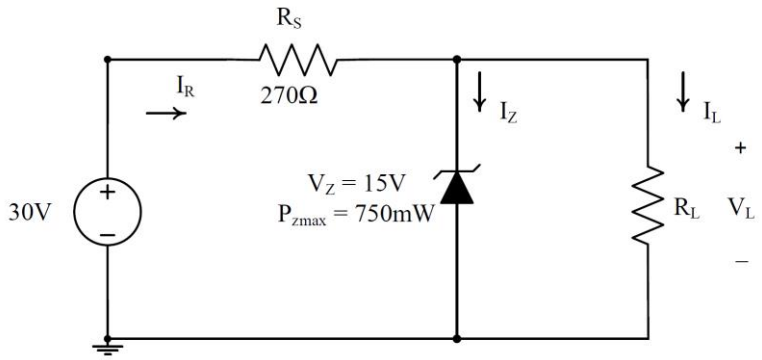

Figure 5