

## 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.

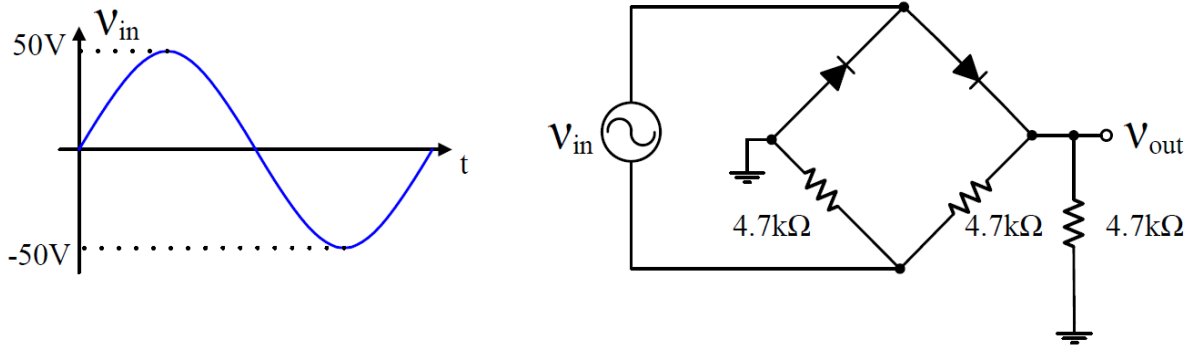


Figure 1

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.

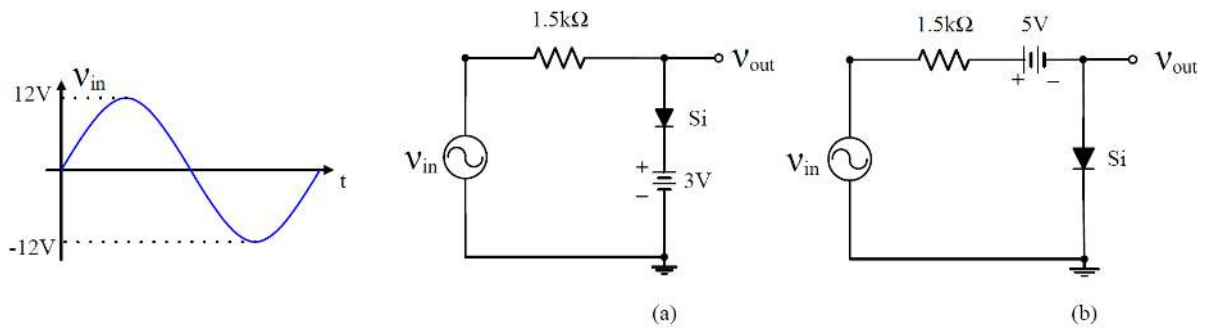


Figure 2

3. Analyze the clipper circuit given in Figure 3. Sketch  $v_{out}$  for the given triangular input.

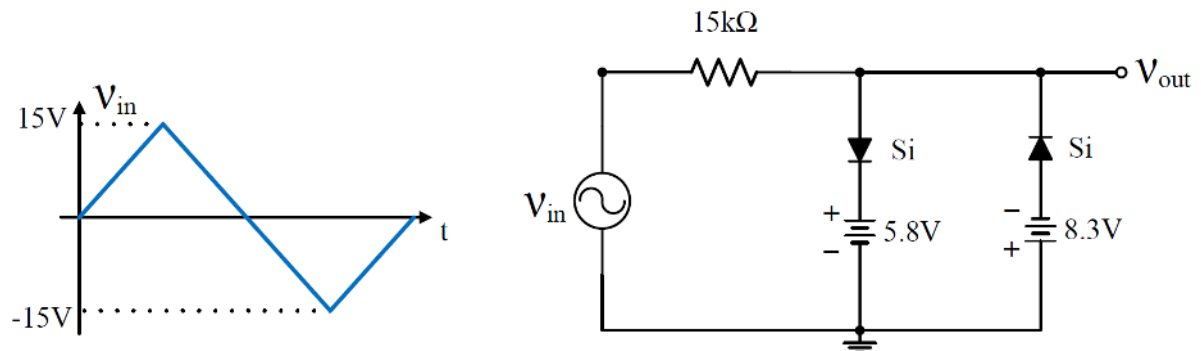


Figure 3

## 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.

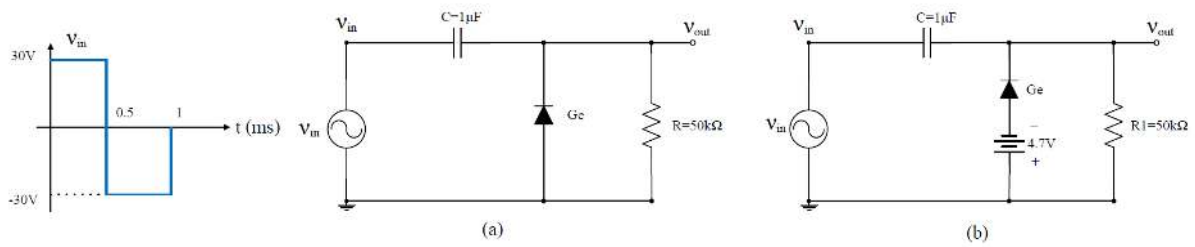


Figure 4

5. a) Analyze the Zener voltage regulator circuit given in Figure 5. Find  $V_L$ ,  $I_L$ ,  $I_Z$  and  $I_R$  if  $R_L=100\Omega$ .  
 b) Repeat part (a) if  $R_L=680\Omega$ .  
 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.

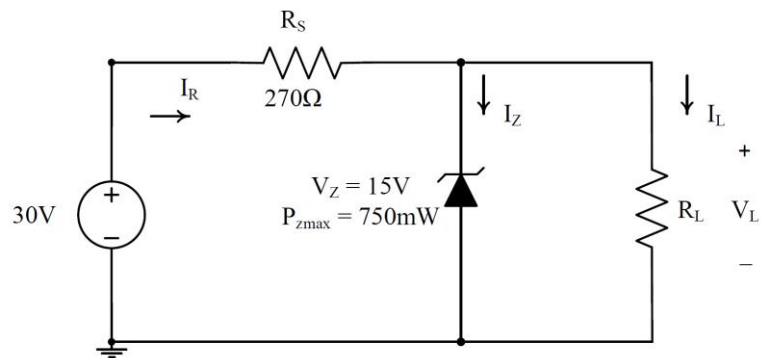


Figure 5