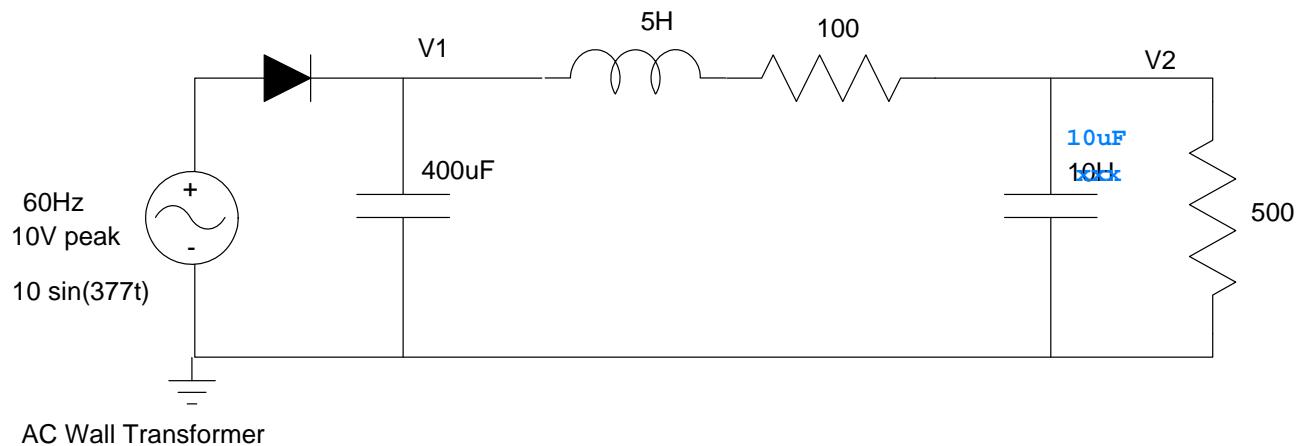


ECE 320 - Quiz #3 - Name _____

AC to DC Converters, Max/Min, Clippers. September 20, 2018

- 1) Determine the DC and AC voltages for V1 and V2. Assume ideal silicon diodes ($V_f = 0.7V$)

V1		V2	
DC (max of V1)	AC (V1pp)	DC (mean)	AC (V2pp)

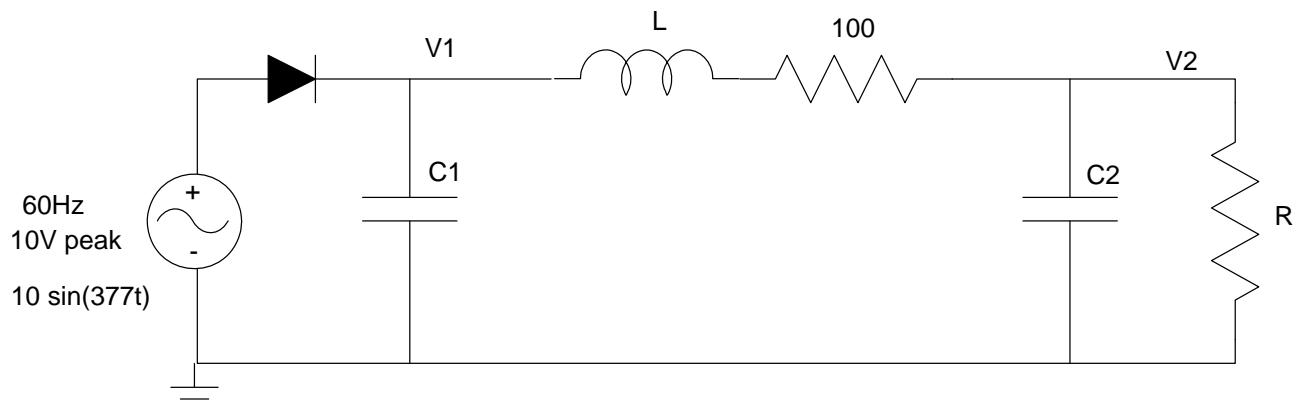


2) Find R, L, and C so that the following AC to DC converter has

- 20mA flowing to the load
- 2Vpp ripple at V1
- 500mVpp ripple at V2

Assume ideal silicon diodes ($V_f = 0.7V$)

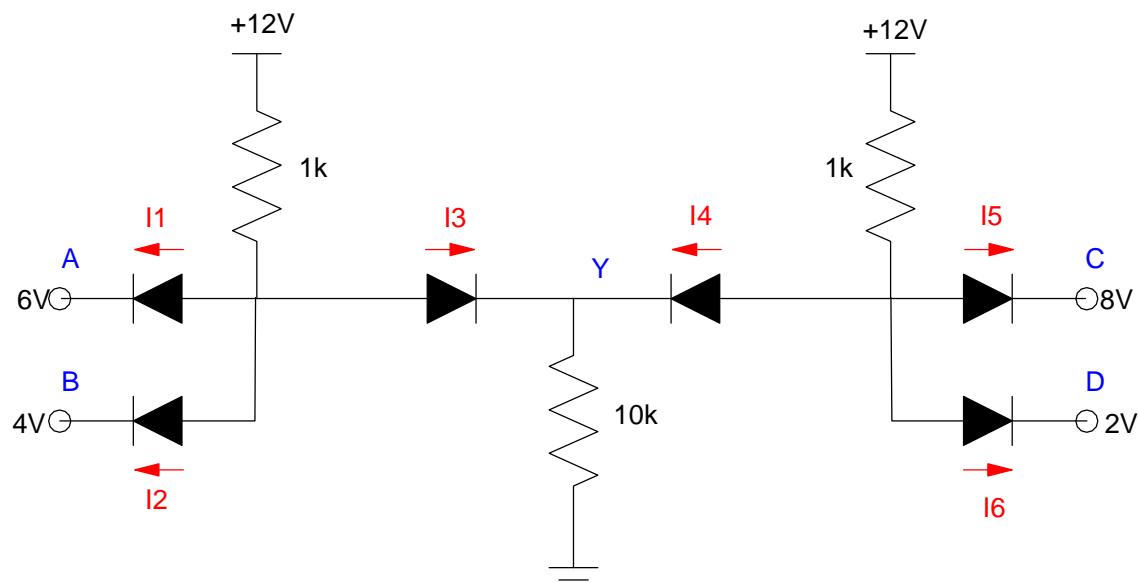
C1	L	C2	R



AC Wall Transformer

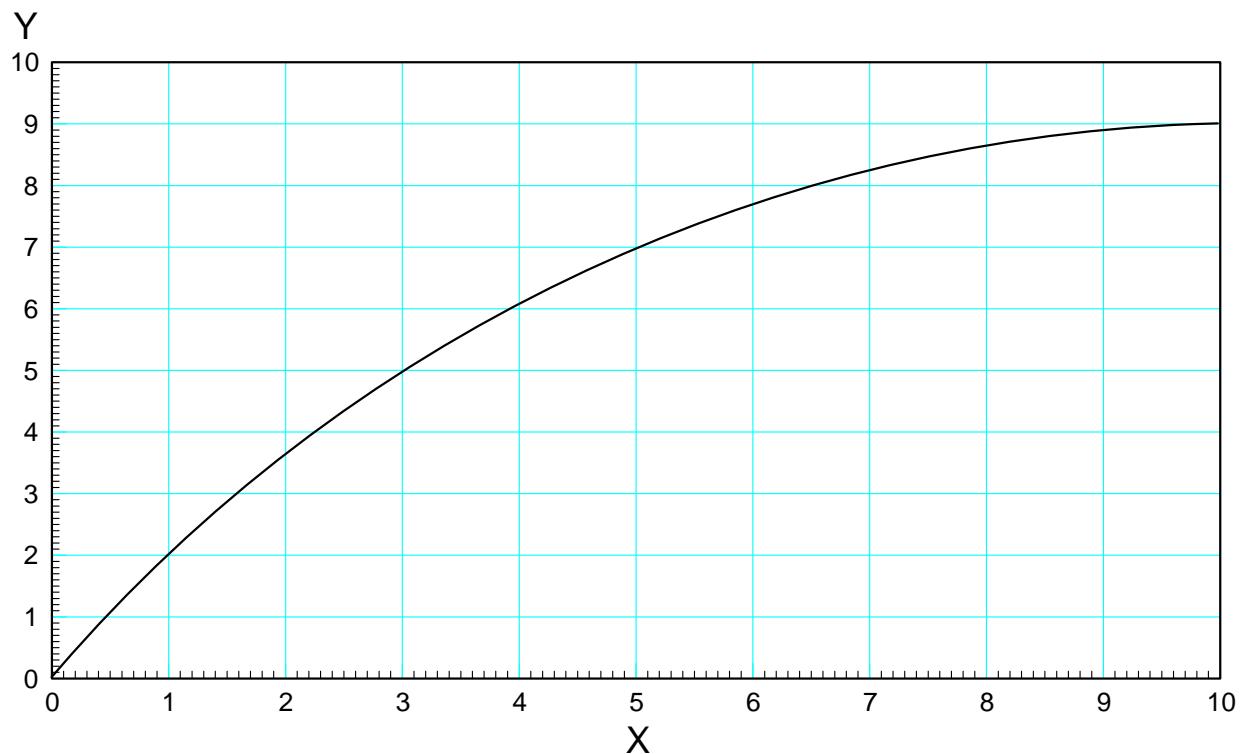
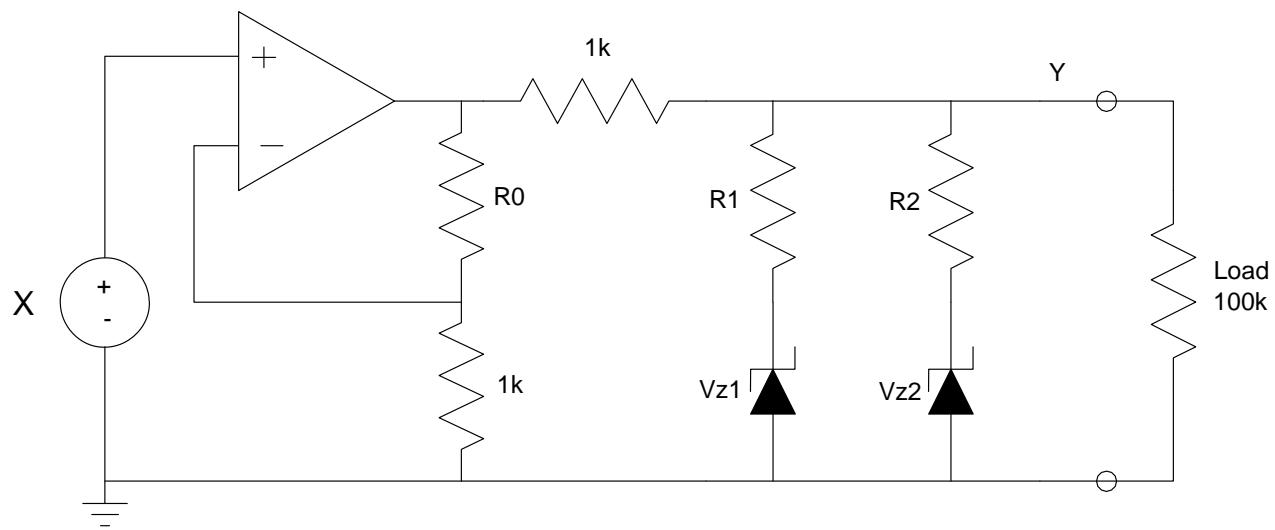
3) Determine the currents for the following max/min circuit. Assume ideal silicon diodes ($V_f = 0.7V$)

I1	I2	I3	I4	I5	I6



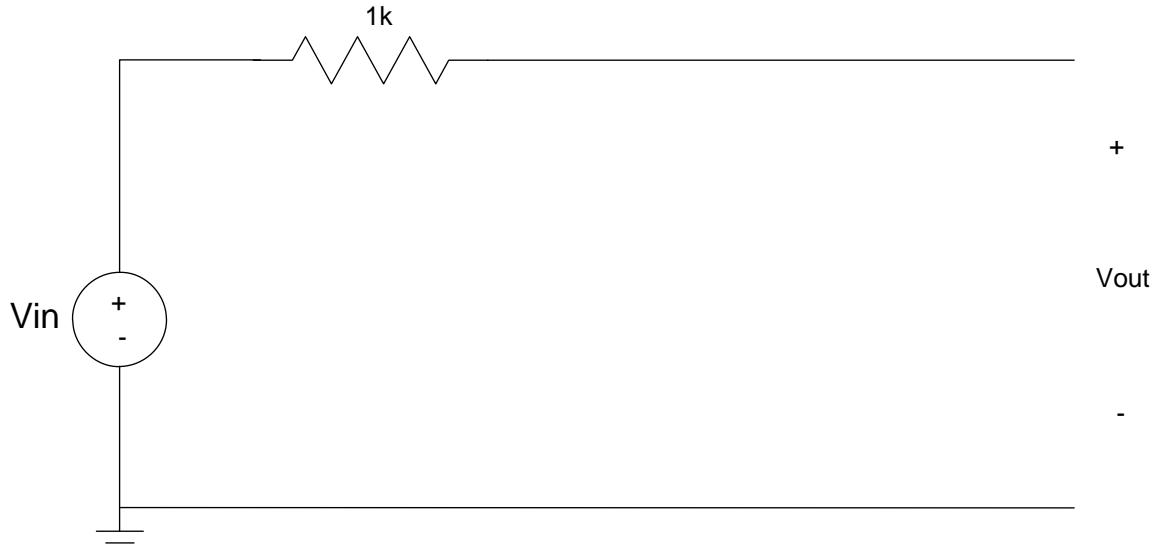
4) Design a clipper circuit to approximate the following function (tolerance 0.25 Volts)

R0	R1	Vz1	R2	Vz2



5) Design a clipper circuit to limit the output voltage to

$$V_{out} = \begin{cases} +5V & V_{in} > 5V \\ V_{in} & -4V < V_{in} < 5V \\ -4V & V_{in} < -4V \end{cases}$$



Bonus! Where do health care dollars go? The following people are the CEO's of five insurance companies. Within 10%, what was their average annual salary in 2017 (within 10%)?

- John R. Strangfeld, Prudential Insurance
- Mark T. Bertolini, Aetna
- Brian A. Kane, Humana
- David M. Cordani, Cigna
- Daniel P. Amos, AFLAC