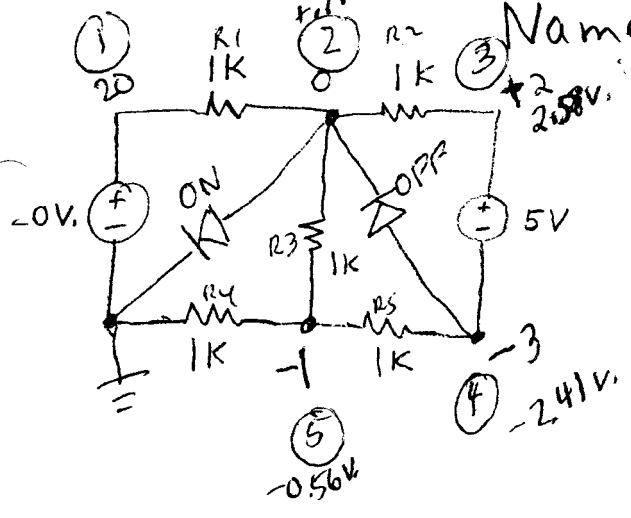


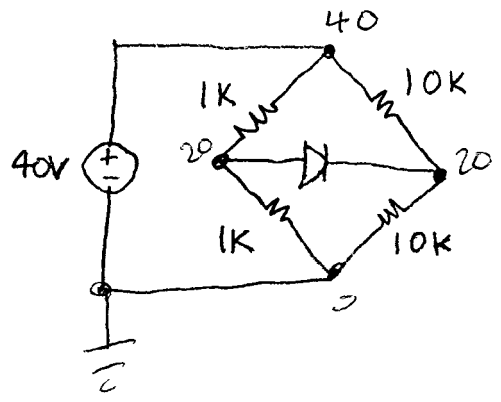
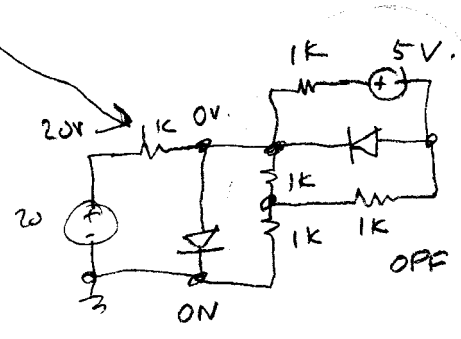
Name _____

Key _____

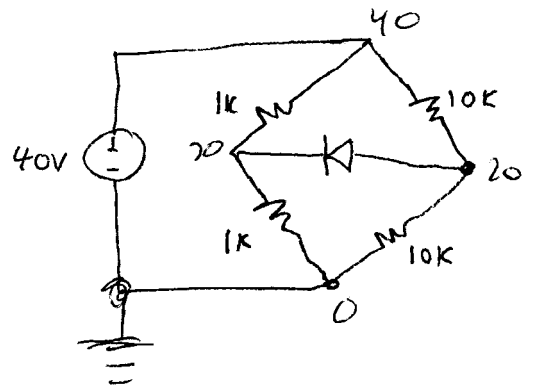
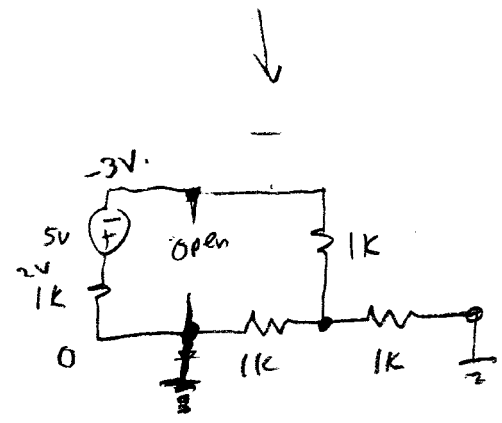


(6)

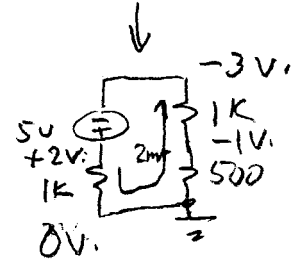
Find node voltages and diode states



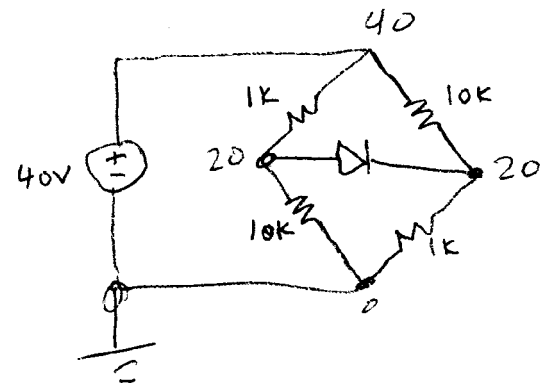
Transition



Transition



$$\frac{5V}{2500\Omega} = 2mA$$



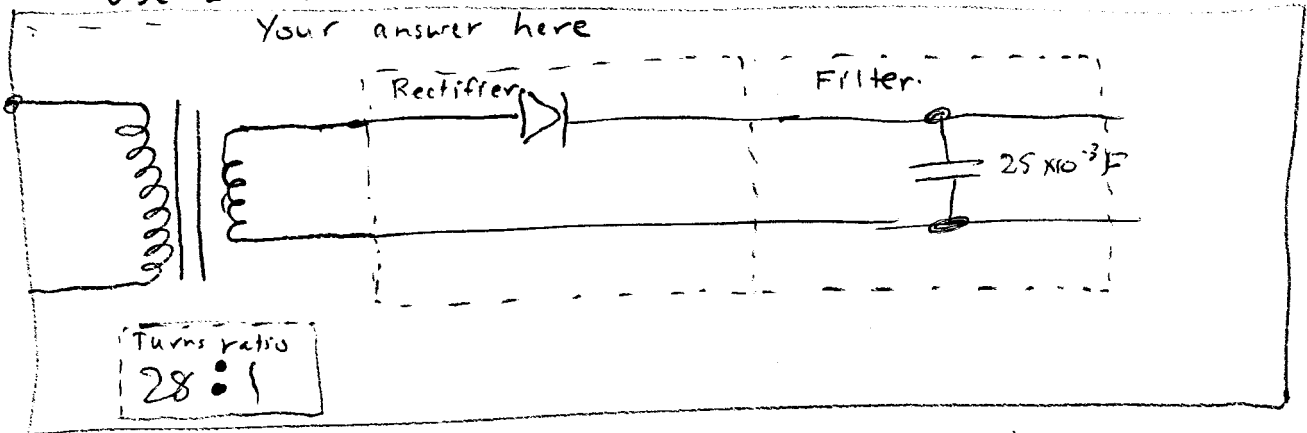
ON

Using ideal diodes, design a power supply to deliver +10 volts DC at 1 Amp with less than 0.1 volt ripple.

The power source is 200 volts @ 400 Hz.

Use a half-wave rectifier.

Your answer here



$$10 \text{ V DC} \Rightarrow 7 \text{ V RMS.}$$

$$\frac{200}{7} = 28.57$$

Filter hint:

$$I = C \frac{dV}{dt}$$

$$\text{Cap: } I = C \frac{dV}{dt} \rightarrow C = I \frac{dt}{dV} = \frac{I}{\left(\frac{dV}{dt}\right)}$$

$$= \frac{1}{(0.1)(400)} = \boxed{25 \times 10^{-3} \text{ F}}$$

$$25000 \text{ } \mu\text{F}$$

pts

Turns ratio

C value

Rectifier sch.

filter sch.