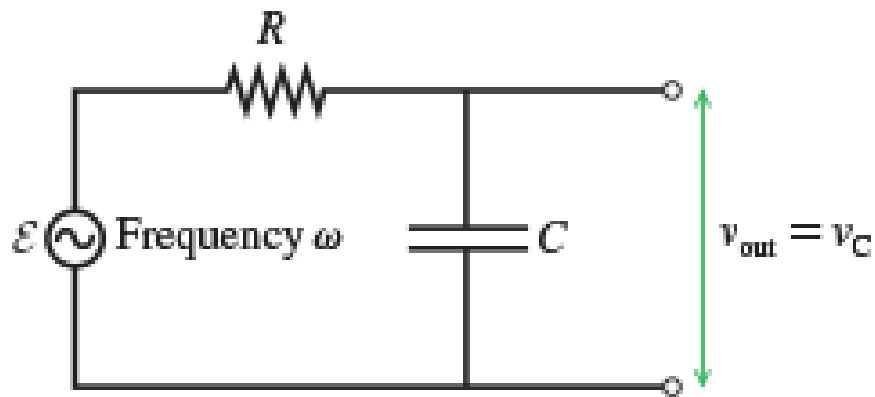


You are receiving an electronic signal, but want to suppress any frequencies above 440 Hz in the signal. You decide to build a low-pass filter like the one shown below with a cut-off frequency of 440 Hz and you have on-hand a $2.4\ \mu\text{F}$ capacitor.



- a) What value resistor would you use in the circuit?
- b) If the unfiltered source signal strength is 5.0 V, what signal strength would you predict if important information is being sent at 120 Hz?
- c) If the unfiltered source signal strength is 5.0 V, what signal strength would you predict from noise in the signal at 3500 Hz?