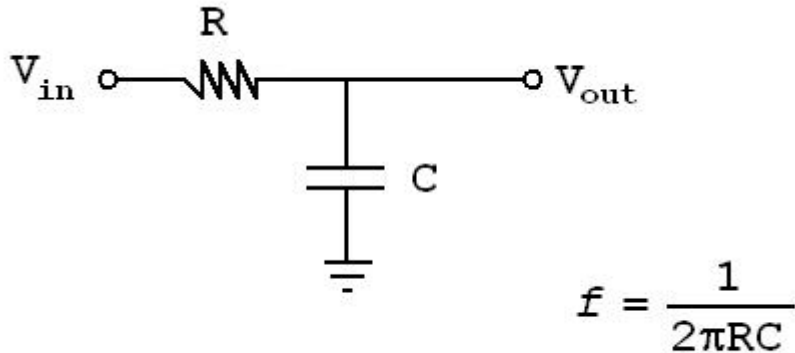


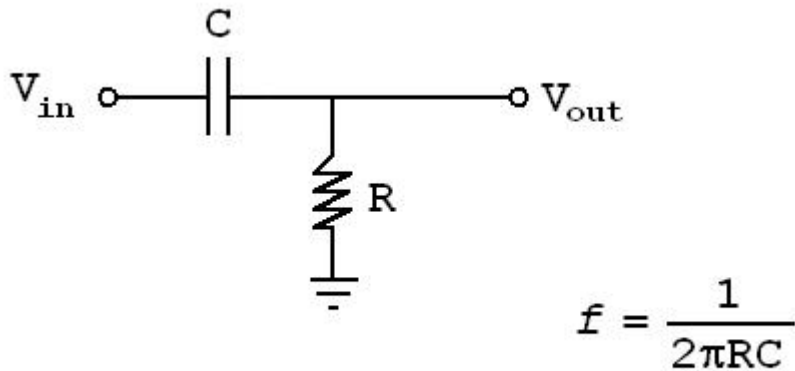
Filters (Low-pass and High-pass)

Low-pass Filters (LPF)



By combining a resistor with a capacitor as shown, you can make a low-pass filter. The output is approximately equal to the input at low frequencies (approximately $< 2\pi RC$), but goes to zero for higher frequencies. The capacitor will only allow current to flow through to ground if it sees a high frequency voltage at the input. Therefore, the above arrangement will allow low frequencies to get to the output side (V_o) while preventing higher frequencies from getting through. This is a **low-pass** filter because lower frequencies are allowed to pass while high frequencies are blocked.

High-pass Filters (HPF)



Again, the capacitor will only allow high frequencies to pass through it. Therefore, only high frequencies (approximately $> 2\pi RC$) can get through and low frequencies cannot. This is why this circuit is called a **high pass** filter.