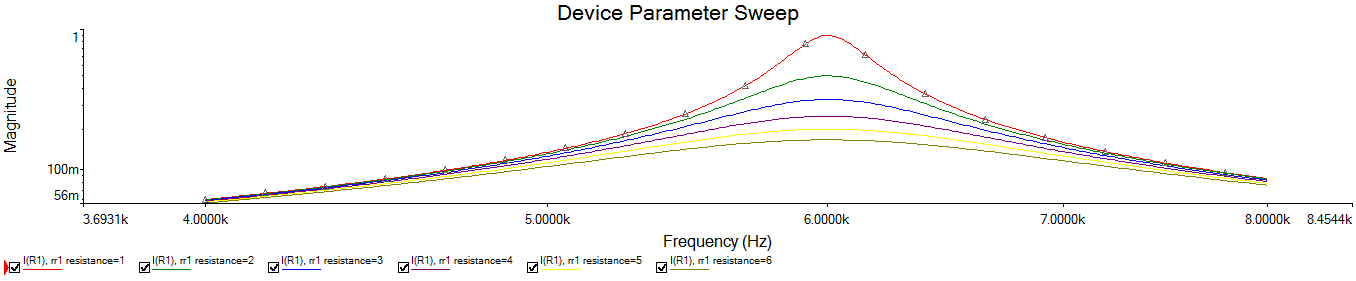
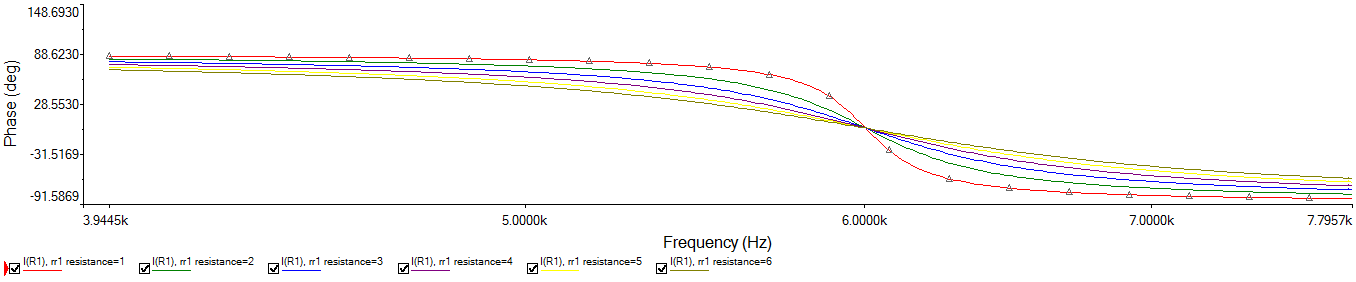
**Effect of R on Q factor**

**Circuit A:**





Questions:

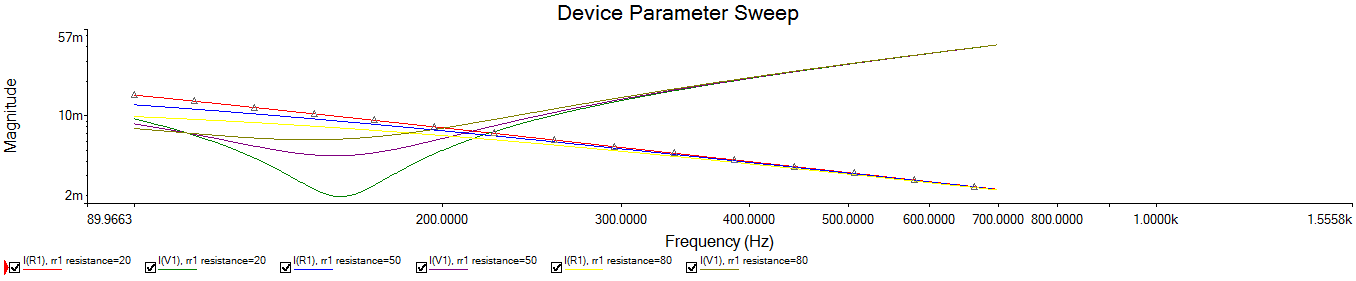
1. Impact of R on:

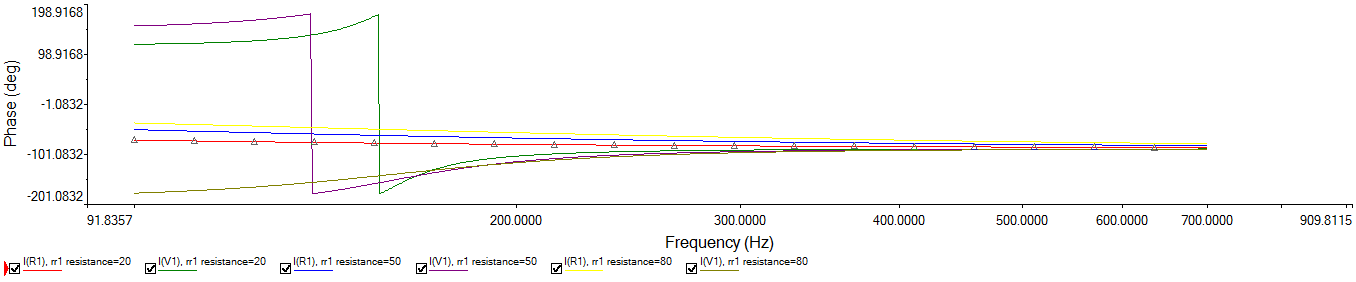
1. Bandwidth: , thus BW is directly proportional to R
2. Quality Factor: , thus Q is inversely proportional to R
3. Selectivity: Selectivity is equivalent to Q factor, i.e.,

Selectivity which is inversely proportional to R, i.e., a more selective circuit will have a narrower bandwidth whereas a less selective circuit will have a wider bandwidth

**Circuit B:**







Questions:

1. Impact of R on:
2. Resonance frequency: , is decreases as R increases
3. Quality Factor: , thus Q is inversely proportional to R
4. Bandwidth: BW , thus BW will increase along with R till R = , then it decreases as R increases.
5. Selectivity: Selectivity is equivalent to Q factor, i.e.,

Selectivity will increase as R increase till R = , then it decreases as R increases.

1. Yes, RLC circuit can be used as a filter due to its selectivity towards band and frequency.
2. RLC series circuit in the first experiment with R = 1 Ohm, acts as a **band pass filter** when output is taken across **R** as it allows a specific range of frequency, i.e., a specific band.
3. RLC parallel circuit in the second experiment acts as a **band stop filter** when output is taken across **capacitor**, as it rejects a specific range of frequency.
4. RLC parallel circuit in the second experiment acts as a **low pass filter** when output is taken across **Resistor**, as it allows lower frequencies and rejects higher frequencies.