* Resistors
  + Series
    - Ref = sum of resistors in series
      * i is the current across each resistor
      * Rk is each resistor in series
    - Voltage Divider
      * Two resistors in series but measure voltage across one resistor
  + Parallel Resistors
    - 1/reff = sum of reciprocal resistances
    - Resistance is lower than each resistor alone
      * Approache value of lowest value resistor
    - Current Splitter
  + Multimeter
    - When measuring dc voltage, the internal resistance of the multimeter must be much larger than the resistance of the circuit
    - Multimeter closes the circuit and measures the voltage drops across the internal resistor however because there’s two resistors in series the current wil drop twice and the measured votlage will be smaller than the input voltage
    - By having the internal resistor being much much bigger in the meter we minimize loading errors
    - Loading errors
      * Difference between measured voltage and measured voltage
      * Will always be smaller than actual voltage as
    - Current measurements
      * Very high impedence of Rm results in a drop of current to zero
      * Shunt resistor is much much lower than Rm resistor in paralelle with Rm which will result in a voltage drop and a measurable change in current
      * Change in range will result in different shunt resistors; if shunt resistor is similar to load resistance, voltage will essentially be blocked due to high impedeance
* Capacitors
  + Capacitance is equal to charge stored on dielectric divided by voltage
  + C = q/v
  + Dq/dt = i = c\*dv/dt
    - Capacitance does not change in time, it is a constant \
  + Series capacitors
    - 1/Ceff = 1/C1 + 1/C2
  + Parallel series
    - Ceff = C1 + C2
* AC circuit
  + Resistors
    - V = IR; nothing changes
    - Output current is in phase with input current
  + Power
    - E = V^2(peak)//R \* 1/2f
    - Average power
      * DeltaE/deltaT
      * V^2(peak)/2R
  + Average power
    - Equivalent DC power for ac power?
      * VI(dc) = V^2(peak)/2R
      * I(dc)R
  + Capacitors
    - Current is phase phase shifted by 90 degrees
    - Impedance
      * Zc = Xc = -j/omega\*C
      * X sub c is “reactance” in ohms\\z
      * Higher frequency relates to low impedance and vice versa
* RC Circuits