

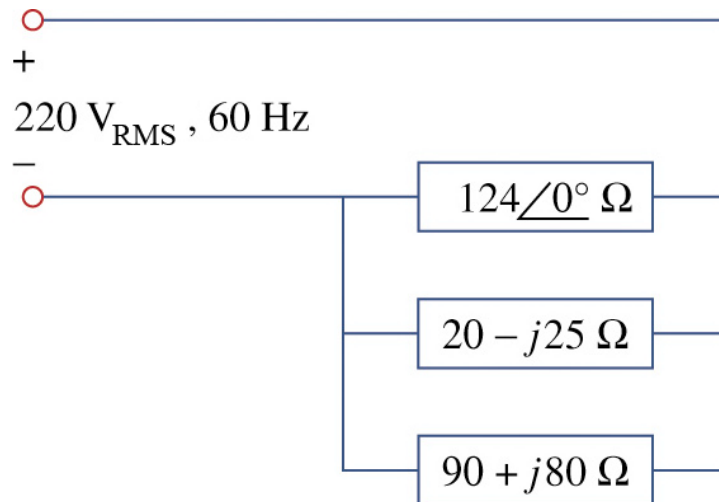
**P1 Concept:** Apparent power, power factor, average power

**Find:** In the circuit below find

- Equivalent impedance of the combined load  $Z_L$  (put in rectangular form, not polar).
- $I_{RMS}$  phasor in polar form. Include units.
- Power factor of the load (the pf is never in polar form!). Include whether leading or lagging.
- Apparent power delivered to the load. Include units.
- Average power delivered to the load. Include units.
- Equation for  $v(t)$  delivered by load in Volts (Not  $V_{RMS}$ , not a phasor)

**Hints:**

- Notice that the given voltage is measured in  $V_{RMS}$ , not V
- a) Has a 22.6 as part of it. c) Is between 0.85 and 0.9. The second digit in d) is an 8. e) Second digit is a 6. f) Should include cos.



**P2 Concept:** Apparent power, power factor, average power

**Do:** Develop a problem of your own, and a solution, that would help other students understand apparent power  $S$  and power factor pf.