P1  Concept:  Apparent power, power factor, average power
Find:  In the circuit below find
a) Equivalent impedance of the combined load $Z_L$ (put in rectangular form, not polar).
b) $I_{\text{RMS}}$ phasor in polar form. Include units.
c) Power factor of the load (the pf is never in polar form!). Include whether leading or lagging.
d) Apparent power delivered to the load. Include units.
e) Average power delivered to the load. Include units.
f) Equation for $v(t)$ delivered by load in Volts (Not $V_{\text{RMS}}$, not a phasor)

Hints:  • Notice that the given voltage is measured in $V_{\text{RMS}}$, 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 $pf$. 